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ABSTRACT

This monograph is the eighth in a series on Illinois educational finance. The first section discusses the decline of Illinois' funding for both K-12 and higher education relative to other states. The second section investigates whether the decline in funding is part of a general decline in the economic affairs of Illinois or whether other factors are involved. The third section discusses the effectiveness of litigation in K-12 finance and advocates litigation as a means of increasing the funding levels for education in Illinois. The fourth section deals with the wording of an education article in the Illinois Constitution. Appended are (1) references; (2) eight rank-change tables; (3) two elasticity comparison tables; (4) two expenditure tables; (5) alternative computations of elasticities by the two-point-in-time method; (6) data sources; and (7) abstracts of the MacArthur/Spencer series on Illinois educational finance. (SI)

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MacArthur/Spencer Series Number 8

GUILTY GOVERNMENTS: THE PROBLEM OF INADEQUATE EDUCATIONAL FUNDING IN ILLINOIS AND OTHER STATES

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This series of monographs is dedicated to Professor Lucy Jen Huang Hickrod, late of the Sociology Department of Illinois State University. Death has forever taken Professor Huang Hickrod from intellectual labors, but she remains an inspiration to her husband, her family and her many friends. *Sic transit Gloria Mundi.*

GUILTY GOVERNMENTS; THE PROBLEM OF INADEQUATE EDUCATIONAL FUNDING IN ILLINOIS AND OTHER STATES

> The air was filled with phantoms, wandering hither and thither in restless haste, and moaning as they went. Every one of them wore chains like Marley's Ghost; some few (they might be GUILTY GOVERNMENTS) were linked together; none were free. Many had been personally known to Scrooge in their lives. He had been quite familiar with one old ghost, in a white waistcoat, with a monstrous iron safe attached to its ankle, who cried piteously at being unable to assist a wretched woman with an infant, whom it saw below, upon a door-step. The misery with them all was, clearly, that they sought to interfere, for good, in human matters, and had lost that power forever.
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> Charles Dickens,
> A Christmas Carol, 1843

Introduction and Overview

Toward the middle of the 19th century, Charles Dickens was in the habit of writing short "Christmas Books" at the end of certain years to complement his much longer regular novels. The most famous of these was A Christmas Carol, from which the lead quotation of this monograph is extracted. Unconsciously, we seem to be doing that as well. The first and fourth monographs in the MacArthur/Spencer special series on Illinois educational finance appeared near the holiday season and this eighth monograph was written at the same usually festive time of year. Regrettably, our finance studies are far from festive. To the contrary, they are funereal in tone, positively dripping with doom and gloom. But then, A Christmas Carol excepted, most of Dickens' works have no "happy endings," either. In another important respect, it is more than appropriate that we start with a quotation from A Christmas Carol. Charles Dickens is believed to have conceived the idea for A Christmas Carol while on a political outing with the noted conservative, Benjamin Disraeli. Dickens was speaking on the subject of the contribution of education to the solution of social problems in Victorian England.[1]

We shall address ourselves to that topic as well in the course of this monograph; though, alas and alack, without the great skill of one of the most sublime masters of the English language.

We render our tragedy in four acts. In Act One, we note the decline of Illinois relative to other states in adequacy of funding for both K-12 and higher education. We do not fully develop the character "higher education," however, in this particular play since there is another folio being written on higher education which is scheduled for publication in the spring of next year. Act One portrays the decline of Illinois--once a considerable power in educational funding, at least at the secondary education level--to the beggarly levels it now has attained. Like Thomas Hardy's d'Ubervilles, this once proud family finds itself reduced to a miserly and meagerly existence.[2]

In the second act, we unfold the tragedy by investigating whether this decline is part of a general decline in the economic affairs of Illinois; or whether, perchance, some evil turn of fate, externally imposed upon us; or whether, perhaps, in a large measure, we have "done it to ourselves." While our simple analysis cannot completely answer such a broad and important question, we tend to conclude with Pogo, "We have met the enemy and they is us."

No drama is complete without a court scene, and we have ours in Act Three. Doubtless, it lacks the pathos of Jeannie Deans standing before a stern Scottish bar of justice, but, then, we are no more a Sir Walter Scott than we are a Charles Dickens.[3] However, what it lacks in literary merit, perhaps it more than makes up for in terms of substantive importance. If we have fallen to the despised levels indicated in parts one and two of this monograph, then it is imperative to find someway out of this awful situation. One possible course of action is to appeal to the courts, hoping that, in the embrace of the blindfolded Goddess with the Scales, we may be accorded that adequate funding of education that we have obviously not attained from the Illinois Curia, nor from the Gubernatorial Throne. Act Three is concerned with what the financial effect of such a course of legal action might be. In the closing act, we ring down the curtain in true Wagnerian fashion. Since our heroes in the executive branch and the legislative branch have failed us, and, since the effectiveness of our actions through the courts is debatable, we must appeal to the "basic law of the land," e.g., we advocate a change in the Illinois constitution. Short of calling out the "guilty governments" for trial by individual combat (there are too many of them for that) or meek supplication of the Deity, we can think of no other way out of our dilemma of inadequate educational funding in Illinois.

As always in these MacArthur/Spencer monographs, we have tried to keep the prose readable; perhaps even mildly entertaining–at least as entertaining as such a dismal subject can be made. However, we do have a duty to the educational researcher as well as to the general reader; therefore, on occasion, we must lapse into the arcane jargon of that priestly class. If we failed to keep the exposition simple, perhaps it is well to recall one of John Kenneth Galbraith's famous "laws": Scientific mumbo jumbo can only be conquered by more scientific mumbo jumbo.

Without further prologue, we do now raise the curtain on our tragedy. Let us hope that it means more to you than it did to Macbeth: "It is a tale told by an idiot, full of sound and fury and signifying nothing."[4]

Drop in Rank Order

In his treatise on the notion of adequacy, published earlier in this series, Professor Ward warns us of the dangers of placing too much emphasis on rankings of states.[5] He is technically correct, of course, since there are many reasons why one state may rise relative to another in the rankings of the 50 states. Still, we cannot ignore these simple rank statistics. We cannot ignore them because others choose not to ignore them. Ranks are quoted all over the place, especially in the popular press. A state is known for its ranking. Ranks have become, in reality, a form of reputation; the "good name" of the state is partially a matter of its standing relative to its sister states. It is well to remember the words of Iago on this score: "Who steals my purse steals trash; 'tis something, nothing; 'twas mine, 'tis his, and has been the slave to thousands; but he that filches from me my good name robs me of that which not enriches him and makes me poor indeed."[6] As the facts below clearly indicate, over the last decade, such a feloneous assault has indeed been perpetrated in Illinois, and the felons are still at large.

Attention is first directed to Table 1. When the decade under analysis began, Illinois enjoyed a rather good reputation among the 50 states relative to expenditure for K-12 education. It was sixth from the top among the 50 states in expenditure per ADA. However, by the end of the decade it had fallen 14 ranks and was at the 20th position. Only one other state in the Union had a poorer record than this; Arizona managed to fall 20 ranks during the same time period. By contrast, two other states enjoyed an increase in reputation during this decade. Texas rose by 18 ranks and Vermont rose by 14 ranks. Map 1 displays these rank changes for the 50

states. As might be expected, on the whole, the state governments of the West and South, with the notable exception of Arizona, have done better than the governments of the Midwest and the Middle-Atlantic states. The three northern New England states have also done well.

As we noted in an earlier monograph in this series, dollars do not buy the same things from state to state. That is to say, the cost-of-living varies from state to state. Therefore, we asked University of Illinois Professor Walter McMahon to update his geographic cost-of-living index for the MacArthur-Spencer project. This he has done; and, as monograph seven in this series, we have published the indexes, which are both for states within the United States and for counties within Illinois.[7] We now apply this index in Table 2 in this monograph. Table 2 presents expenditure per pupil data in "real" or "constant" terms. There is a slight difference in rank orders between Tables 1 and 2 since the McMahon adjustments are applied to the contiguous 48 states rather than to all 50 states.

When adjustments are made for relative purchasing-power of the dollar, Illinois is burdened with the worst reputation in the nation, having fallen 24 ranks. Oklahoma shares that "cellar dweller" position, having fallen 23 positions. Oklahoma, at least, has the excuse of a collapse in the oil prices during this period. Although fretting under depressed corn prices, Illinois has suffered no such drastic down-turn in the economy. The prizes for gains in rank go to Vermont and Texas. Map 2 displays the results when the McMahon indexes are applied to expenditures per pupil. While there are general similarities between Maps 1 and 2, some differences do stand out. The west is seen to split with Nevada and New Mexico gaining in standings while California and Arizona drop in reputation. Perhaps, it is bitter irony that the current Illinois State Superintendent of Education came from a state which has recently increased its standing in educational spending, Nevada, to the state which has suffered the greatest loss in educational standing, Illinois.

Close inspection of Map 2 reveals some other important contrasts. While ignominious Illinois was suffering its loss of 24 positions, and Iowa was not doing a great deal better with a loss of 19 positions, Kentucky gained 13 ranks. The south also shows differentiation with North Carolina and Georgia increasing their reputations while Alabama slips somewhat. It is notable that Florida does a great deal better than California in terms of gains in rank order, once the original expenditure data is adjusted for differences in cost-of-living.

In Tables 3 and 4 and in Maps 3 and 4, we have shifted to the per capita measure rather than the per student measure. Arguments can be presented for both measures. Per pupil is usually the choice where the focus is on level of services provided to students; hence, we chose to lead with those data in Tables 1 and 2 and their associated maps. However, if one is thinking in terms of "human resource investments" or investment in the labor force, ideas to which we will return later in the monograph, then it may be useful to think in terms of educational spending in per capita terms. Either one bears on the concept of "adequate" spending for education.

In Table 3, Arizona and Illinois are almost dead even in terms of rank losses in expenditure per capita for K-12 education. As Professor Ward has pointed out, rank losses do not tell nearly the whole story. For example, it is important to note from what rank one fell. It can be argued that the loss in Illinois, which was sixth in the nation in 1977-78--positions of relative educational leadership--to the middle of the pack (34th) hurts much more in reputation than it does to be like Arizona, in the middle of the pack in the late 1970's and dead last runner as of 1987-88. Map 3 again shows the west dividing with the long vertical tier of "mountain" states from Montana to Texas demonstrating gains in educational investment levels while other western states do not do as well.

When the McMahon index is applied to per capita K-12 spending, Illinois shows the greatest relative loss in investment in the general work force--if K-12 educational spending is thought of in those terms. Contrary to some claims made during the current Presidential campaign, Massachusetts does not have all that good a showing in relative educational spending, having dropped 28 ranks during the decade under analysis. However, another state, prominent in the recent Presidential election, Texas, can lay legitimate claim to having risen from 34th to 3rd in the nation on this particular indicator of investment in education. It is not, of course, the purpose of this monograph to award gold stars to individual politicians or political parties. We take the somewhat safer route and castigate whole "governments," perhaps relying on the principle that there is safety in numbers. Map 4 again shows the now-familiar pattern of the West doing better than the Midwest and East. It is interesting that, with the exception of Nebraska and Oklahoma, there is a solid belt where state governments have increased their K-12 investments from the Canadian border, with Montana and North Dakota, down to the Mexican border, with New Mexico and Texas. These are not "guilty governments," in the terms of the title of this monograph. These are "meritorious" governments, and further research is clearly indicated on just why our long, lean, western friends have done so well while state governments in the Middlewest, with some exceptions, have done so poorly.

Tables 5, 6, 7 and 8, with their related maps, look at investment in higher education. In these tables appropriations per full time equivalent student (FTE) are used rather than expenditures per average daily attendance (ADA). The change in measurement would pose some problems if comparisons were being made within a state on K-12 levels of support versus higher education levels of support; however, that is not the thrust of this particular monograph. Here we are clearly more concerned with the standing of a state relative to the other states, rather than with the relative allocation to K-12 versus higher education within a state. At Illinois State University, a doctoral dissertation is being completed which casts some light on the relative treatment of K-12 versus higher education within that state.[8] Later in this series, it is our intention to focus in greater detail on the K-12 versus higher education support levels in a separate monograph.

With regard to investments in higher education, the State of Illinois does not appear to have suffered the degrading loss of investment that it has in K-12 education. However, this is so simply because the state never had much of a reputation for investment in higher education in the first place. One cannot lose what one never had. In Iago's metaphor quoted earlier, there just wasn't anything to steal. In 1977-78 Illinois ranked a relatively poor 35th in investment in higher education and in 1987-88 it had fallen to the cellar at 47th, a loss of 12 ranks. Other states have poorer records. Nebraska, for example, takes the booby prize in support of higher education, having dropped from the middle of the pack to the end of the pack (a loss of 22 ranks) and now in 44th position. Also, there are also clear differences between standings in K-12 expenditure vs. standings in higher education expenditure which need further exploration. Texas and Vermont, for instance, big gainers at the K-12 level, show no such gains at the higher education level. In fact, Texas lost 11 positions and Vermont gained only 3 positions. Map 5 turns up an interesting fact: there is clear weakness in higher education investment in the upper Midwest. With the exception of Minnesota, there is a block of contiguous states (the two Dakotas, Nebraska, Iowa, Illinois and Wisconsin) that have lost more than 11 ranks with regard to appropriations per FTE. There is also a block of southern and South Atlantic seaboard states that have increased their investment in higher education. These contiguous blocks appear more noticeable in higher education funding than in K-12 funding; again the phenomena deserves further investigation.

When adjustments are made in higher education funding by the McMahon index, the loss in Illinois is slightly less--9 ranks. Some additional, striking differences show up between higher education standings and K-12 standings in some of the other states. Massachusetts could well call itself an "education state" with a gain of 37 ranks when current dollars per FTE are used or 31 ranks when real dollars per FTE are used. This is in considerable contrast to its K-12 investments. Nevada, also in contrast to its K-12 showings, remains at the bottom of pile along with New Hampshire and Illinois. Arizona, the big loser in the K-12 rankings, was already next to last in 1977-78 in higher education support, and simply became the very lowest in 1987-88. Arizona shows a slight rise from the bottom when McMahon adjustments are made in the data. Comparison of the maps makes one thing clear, there is no domination of the western states in rank order gains in higher education funding as there is in K-12 education. In addition to the stellar performance of Massachusetts in educational investing in higher education, a number of other eastern states have made respectable progress: Maine and New Jersey when McMahon adjusted FTE figures are concerned and New York can be added when per capita rather than per FTE figures are used. When the McMahon adjusted per capita appropriations are used, the leader remains Massachusetts, but some other states show appreciable gains in ranks in supporting higher education including Kentucky, New Mexico, and Virginia.

One of the difficulties with looking only at the expenditure side is that state expenditure levels for both K-12 and higher education are affected by so many variables. The rising and falling fortunes of states relative to their economies, the increases or decreases in enrollments, the net in- or out-migrations, all these play a part in determining both absolute and relative expenditure levels. Fortunately, or perhaps unfortunately, most of these forces come to bear upon the per capita income of the state. Therefore, it is appropriate to examine the changes in the K-12 expenditure level of a state or the changes in the higher education appropriation level relative to changes in the per capita income of that same state. This we do in the next session entitled, "Elasticities or Priority Ratios."

Elasticities or Priority Ratios

As this monograph was being written the Presidential campaign in the United States was in full bloom. In this particular year, it seemed de rigueur to lay claim to being either an "Education Governor" or to express the desire to be known as an "Education President." Of course, as in most political campaigns, there was little recourse to the available record, and what recourse there was could be reliably predicted to be favorable to the position of the candidate making the "recourse." Fortunately, there is a simple but powerful measurement that can shed more light than heat on the degree of priority state governments assign to educational support. It is an old tool in economic research usually referred to as "income elasticity of demand" for a particular good or service.[9] It consists of simply comparing the increase in expenditure for the good or service in question with the increase in income. This can be done in terms of a household or it can be done in terms of any governmental unit. In the K-12 case, we are comparing percentage increase in expenditure per capita, and in the case of higher education, percentage increase in appropriations per capita, with percentage increase in income per capita. The unit of analysis in this instance is the state. The reader should resist the temptation to compare rank order changes with elasticity findings. The results may be quite different since rank on elasticity depends upon changes in income as well as changes in expenditures.

This ratio of percentage increase to percentage increase has some standard interpretations in economic analysis. If the ratio is unity (1.00) demand for the good or service is said to possess unit elasticity which means the demand for the good or service increases proportionately as the income increases. In the terms of the political economy, that would mean that

no particular priority was assigned to this function and spending for the service simply increased at the same rate as income increased. Values above 1.00 on this ratio are said to represent goods or services that are highly elastic; that is, that demand for the service increases faster than income increases. In political economy terms that would indicate a good or service with a high priority in the collective demand which characterizes the polity. Conversely, values below 1.00 would characterize goods and services which are relatively "inelastic," or in terms of the political economy, a service which did not have a very high priority in collective decision-making. There are not necessarily any value judgments attached to low elasticity measurements. It simply means that the voters elected to spend their money on something else rather than the good or service in question. For example, low values on the indexes reported below could mean either that the people of the state with those low values elected to use their increased income in the private sector and not in the public sector at all; or it could mean that if they did spend those increased dollars in the public sector they elected to spend them on something other than public education. There are many other claimants to the tax dollar that could account for low values in the index: public health, crime prevention, transportation, welfare, etc.

Perhaps it is just the effects of the current Presidential campaign, but we are a little tired of hearing the constant bombardment of statements that "education shall be my number one priority." We hear that phrase repeated over and over again from both sides of the aisle. If education has been a priority of the state in question, then the ratio will be greater than 1.00; if it is far less than 1.00 then one is simply listening to a lot of balderdash if any politician from that state claims that "education is a priority." Of course, knowing that some obscure academic tucked away in a state university is making calculations on the matter has never changed the political rhetoric in the past, so it probably will not do so in this instance either. However, politicians can no longer count on this. The press becomes more sophisticated every year, and we have noted that reporters seem to be reading these MacArthur/Spencer studies with more fidelity than the elected officials.

These demand elasticities, or public spending priority ratios, make good dependent variables in econometric models. Ideally, one should be able to construct models in which the elasticities are predicted and explained by a set of determinants. However, such econometric model-building is not our purpose in this particular monograph since our main thrust is upon how well or how poorly Illinois has performed relative to other states. In that sense, these simple ratios can also be looked upon as "effort" indexes, depicting whether a state is making a strong or a weak fiscal effort for education. They do take the analysis one step further than the simple ranks of expenditure per pupil or appropriations per pupil.

Two methods of calculation are used in the elasticities computed below. The first, or "two point" method, simply uses two points in time to compute the percentage changes in both the numerator and the denominator. Actually, in the calculations presented here, four points were used: the average of the first two points in the time series and the average of the last two points in the time series. The chief disadvantage of the "two point" method is that if either of the two points is aberrant from the usually configuration of the time series then the method will seriously under or over estimate the index. Using four points helps this somewhat, but the problem remains. The second method solves this by using all the points on the time series. In this second method of calculation, a linear regression is performed with the expenditures per capita, or the appropriations per capita, regressed against the income per capita. When both variables are transformed into their logarithms, the regression coefficient (i.e., the slope value) is the constant elasticity of the demand function. For the majority of our readers, what we have just written will probably be about as understandable as if we were to express the same idea in the Gaelic Albanach. Well, "Tha mi duilich gum chan eil sibh a' tuigsinn na tha mi ag radh." "I am sorry that you do not understand what I am saying," but unless you want to consult either

an econometrics textbook or a Gaelic grammar, perhaps you will just have to take it on faith that the second method, the regression method, is the most accurate of the two approaches. However, the results of both methods are given in the event there are those who would like to try to calculate the values themselves. (You are on your own in the Gaelic, and, since there are only about 100,000 Gaelic Albanach speakers left in the world, you may never know if the Gaelic is correct.) To keep the exposition simple, we have placed the two point calculation results in Appendix A.

Table 9 and Table 10 with their related maps, display the results of the elasticity analysis, or the priority analysis, if you prefer that frame of reference. If values above 1.00 are required to show a true priority in public spending for K-12 education, then membership in that club is limited indeed. Only Wyoming, Alaska, West Virginia, Texas, Kentucky, Montana, Oklahoma and Oregon can make the cut. South Carolina is a near miss. In these states the voters and their elected representatives assigned a high priority to K-12 spending. Conversely, in Illinois, Massachusetts, California, Hawaii, Minnesota and Arizona the voters and their elected representatives assigned a low priority to spending for K-12 education. Again, we must remind the reader that we have no way of knowing, at least from this simple analysis, whether this low priority was a matter of simply assigning a low priority to all of public spending or whether there were other forms of public spending that had a higher priority in these six, low-value states. Only a more detailed analysis of state budgets could cast light on that important question.

The higher education results are found in Table 10. The higher priority club in postsecondary education is a little more democratic than in K-12 education. Here we have a full dozen states with values greater than 1.00: Alaska, Wyoming, Massachusetts, North Dakota, Oklahoma, Tennessee, New Mexico, North Carolina, Louisiana, Montana, Ohio, and Delaware. New Jersey is a near miss. In all of these states, the voters and their elected representatives can be said to have assigned some priority in higher education spending. By contrast, in Arizona, New Hampshire, Pennsylvania, South Dakota, Colorado, Oregon, Washington, Idaho, and Nevada, other spending priorities have prevailed.

Again, the contrast and comparison of the two rankings are instructive, though such a comparison raises far more questions than it answers. Only four states (Alaska, Montana, Wyoming, and Oklahoma--all western states) make it into the very exclusive club of those states that assign a high priority to both K-12 and to higher education spending. If one arbitrarily assigns a value of .666 as a cut off point on the low priority states, then Arizona is the sole outcast in terms of priority spending for education at both the K-12 and the higher education levels. While our attempt in this monograph is primarily descriptive rather than analytical, an obvious interpretation of the results jumps to mind. During the period under analysis, Arizona has had a very large in-migration of relatively well-off, older retirees. It is perfectly consistent with the results of this study to believe that the citizens of Arizona do not see much benefit in their investing in the quality of their work force since they, themselves, are retired. Since they are older, what investments they make in the public sector are not apt to be for the benefit of younger citizens, but rather for the benefit of older citizens, such as health needs and the like. Arizona is a very interesting "test case," and, if our analysis is valid, then education in Arizona is probably in greater trouble than in any state in the Union.

But there are many other cases here for which we have no such obvious interpretation. For example, what caused the government of Massachusetts to assign such a high priority to higher education while assigning such a low priority to K-12 education? There are similar differences in other states. Minnesota has done reasonably well by higher education but not well at all for K-12 education. The same can be said of Hawaii. Illinois, and California have assigned fairly low priorities to higher education and very low priorities to K-12 education. The

winners--or from our point of view, the losers--in the "guilty governments" contest would seem to be three states: Biggest Loser, Arizona; Next Biggest Loser, California; Third Biggest Loser, Illinois. The citizens of these three states must expect to reap a very small harvest from what they have not sown. By contrast, the citizens of the four states previously mentioned (Alaska, Montana, Wyoming, and Oklahoma) should expect to reap a rather bountiful harvest in the future from their investments in education. Other states have shown differential priorities: Texas has assigned greater priority to K-12 spending than to high education spending, while Massachusetts assigned greater priority to higher education spending than to K-12 spending. It is not so easy to even speculate, much less predict, what the outcomes of those different strategies might be. The most difficult problem is that the returns to investment in public education are long-term, not short-term. Both Alaska and Oklahoma have experienced recent difficulties in funding public education due to the lower price of oil and the effect of the drop in oil prices on their respective economies. Whether either state can keep up the record of investment in education that they have shown in the past is problematical. Readers of this monograph in both states are probably thinking, "It is hard to keep your mind on the long term effects when you are up to your gluteous maximus in alligators."

Thus far in the study, we have been primarily descriptive with an occasional attempt at ad hoc analysis. In the next two sections we shall shift into an analytic mode and then from a descriptive mode into a prescriptive mode. Strict social science studies never have to do this sort of thing. Their cars usually have only two gears on them, description and analysis. Administrative studies usually have three: description, analysis, and prescription. As long as we stay out of reverse, we are probably doing all right. From this point onward, the comments in this paper are directed primarily, but not entirely, at the Illinois readership since we have identified Illinois as one of the three states making the least investment in education. We are also shifting at this point to a strong K-12 focus, with the promise that we shall return to higher education funding later in the MacArthur/Spencer series.

The Effectiveness of Litigation in K-12 Finance: Preliminary Analysis

For approximately the last two decades, there has been a great deal of litigation concerning the constitutionality of K-12 funding systems. These challenges have usually been mounted on the basis of the equal protection clause in both the federal and the state constitutions and with increasing frequency upon the basis of the wording found in the education articles of most of the state constitutions. In an earlier study in this series, Illinois State University Professor David Franklin presented an extensive study of this litigation.[10] That study will be updated later in the MacArthur/Spencer series.

Several, important, empirical questions arise from all this legal activity. The basic question is, simply, "Did all this litigation have any effect on K-12 finance?" It follows then that we have to define "effect." At least two effects can be conceptualized. First, did the litigation have the effect of increasing the overall level of funding for K-12 education? Second, did the litigation have the effect of reducing the disparities in spending levels between school districts? Third, did the litigation have the effect of reducing the dependency of expenditures upon wealth in the states in question? In addition, there are a series of steps connected with the litigation, itself. For example, did simply filing the case have any effect? Did carrying the case to the state supreme court and losing have any effect? Did carrying the case to the state supreme court and winning have any effect? We intend to blaze as many trails as we can in this interesting area of the financial effects of litigation; but, for the moment, in order not to take away from the major policy thrust of this monograph, we must exercise some self-restraint and look only at a very basic question: "Did the presence of supreme court decisions in a group of states, no matter whether plaintiff or defendant won, have an effect on the level of funding in that group of

states after the decision took place?" From a policy point of view, that may be the most important of the many questions that can be asked in this area since it determines to some degree whether there is an economic payoff to bring the suit. In a sense, it is a sort of cost-benefit question applied to legal action, although we have not put it in that framework. "Justice," not return on investment, is the usual framework for legal action, but the legal arena is not immune from economic analysis. Perhaps it could even profit by economic analysis since we are fairly sure that, at least in a number of cases, the cost-benefit ratio is positive and appreciable for many class action plaintiffs.

Tables 11A and 11B present the evidence on the effects of school finance litigation throughout the United States. However, "event analysis" is a tricky area and we need to tell the reader what has been done here before we proceed to the central findings. We believe that this area is amenable to much more sophisticated techniques, such as single interrupted time series analysis and even multiple interrupted time series analysis.[11] However, the data requirements are formidable for SITS and even more so for MITS. Therefore, we elected to proceed in this particular monograph with a more conventional statistical technique: the usual "t-tests" between means. However, even if the statistical analysis is simple, the design is not so simple. For example, it can be argued that the effects of a state supreme court decision do not appear for quite a few years after the "event." This poses a major problem since, in a number of states, only a few years have elapsed since the court decision. In other states, California is the best example, quite a number of years has elapsed since the major court decision. In many states there have been multiple decisions regarding the constitutionality of the K-12 finance system. In order to take this possible delayed effect into consideration, we decided that we would pool all the expenditures per ADA by year into three groups: (a) years before a decision, (b) years after a decision, and (c) all the years in those states that had never had a state supreme court decision during the decade we had under analysis. The (c) group can be thought of as a kind of control group in this "quasi-experimental" design. We also knew, of course, that inflation would effect our expenditure per pupil figures, so we imposed our design upon both current dollars and upon dollars adjusted for the CPI, i.e., "real" dollars. These results are reported in Table 11A.

In addition to the level of expenditure before, after, and for non-event states, we also wanted to know if the average increase in expenditure was greater after the decision than before the decision in the seventeen states which had litigation than it was for the non-event states. That is, we wanted to measure the <u>slope</u> of the time series of expenditure per pupil measurements, as well as the <u>level</u> of expenditures. Therefore, we computed the slope of the expenditure per pupil in the time series before the event, after the event, and for the states with no event. Here we come closer to the type of analysis used in a single interrupted time series (SITS). However, since we wanted to speak "on the average" and not for individual states, we added the 17 slopes together to get a mean slope for the before, the after, and the non-event groups. These results are reported in Table 11B.

As can be seen in Table 11A, the weighted mean level of expenditure per pupil for the years in the after-event-pool is higher than for both the before-event-pool and the non-event-pool. The results are more striking for current dollars than they are for constant or "real" dollars. In fact, by conventional levels of acceptance, the means are not significantly different for constant dollars. Table 11B explores the differences for groups of states. Since the before and after slopes are for the same states, we have used a paired t-test for this situation and an independent t-test where comparisons are being made between the before and after versus the control group. When current dollars are examined, we again find that the slope is greater for the after event situation; that is, the yearly increase in funding per child is greater after the decision than before the decision. It is also greater than the yearly increase in the non-

decision states. The same condition prevails when constant dollars are used; however, the differences between the court decision states and the non-decision states, while appreciable, are not statistically significant by conventional levels of acceptance.

What does all of this mean in practical terms? It means, "when in doubt, sue" since win or lose the fact that a constitutional challenge was brought does effect the future course of K-12 funding, at least in current dollars and at least for the average of the whole group of states in which that type of litigation was launched.[12] There are, of course, several caveats with this type of design. We are speaking "on the average." Whether the decision had a significant effect in each individual state is another matter. There are statistical techniques to get at that question of the effect in individual states as well, but there are formidable data requirements that we were not prepared to face in this particular monograph. We may take them on later in this series. Also, it is very important to note again that we are commenting on the level of funding in the states, what most school finance analysts these days would describe as the "adequacy" of the state finance system. We have said nothing, and can say nothing since we do not have the data, on the effect of the decisions on the "equity" of the school finance system. There are a few states with enough time series measurements on "equity" to conduct this later type of investigation. We are currently trying to gather together these elusive data with the intent of conducting similar statistical procedures on those kinds of equity data. Hopefully, the publication of this monograph will stimulate other researchers in this area. It is vitally important to conduct "event" analysis on equity data, not adequacy data, since it was on equity grounds that the cases were brought in the first place. One can now number among the many ironies of history the fact that, when cases were brought on equity grounds and lost on adequacy grounds, the practical fiscal effect was still to increase the adequacy of the overall K-12 funding system. Plaintiffs must be enormously encouraged since they are in a "win, win" situation. We interpret our results to mean that the pressure brought upon the state legislature was enough to increase the funding for K-12 education regardless of whether the case was won or not. Apparently, a formal "remedy" is not needed since the evidence suggests that the pressure brought by the case, itself, was enough to lift the level of funding.

Before the stampede begins to the court houses around the country and before we start receiving congratulatory messages from a large number of lawyers whose incomes we have probably just increased (well, it was near Christmas when this monograph was being written), there are the number of usual qualifications on the research design that have to be noted. It must be stressed that even the presence of a state supreme court decision was not enough to offset the pernicious effects of inflation. Also, we have not corrected for changes that were occurring simultaneously with the event in question. For example, if the income of a given state went up greatly after the decision, that might account for the higher K-12 funding levels after the decision. However, by grouping the states and commenting only on the effects of the decisions on the group means, we think we have offset some of these confounding effects. If we have not, or if the design is flawed in some other respect, we have no doubt that we will hear about it in due course. That is one important element of empirical research. Assuming there is a critical mass of interested researchers, someone will always correct our mistakes.

Our findings in this section have more meaning in Illinois than they do in the other states where we have found low investment levels in K-12 education. In California the advice to "sue now" would make little sense because they have already sued repeatedly in that state. There could, of course, be a repeating effect of litigation, and that is yet another part of this puzzle that we have not unraveled; e.g., whether repeated trips to the courthouse make a difference in the level of educational funding. There is a straightforward extension of SITS called MITS, multiple interrupted time series, that might cast some light on this important policy question, but, as usual, the data requirements are formidable. Arizona is in much the same situation, having

already had some litigation on the school finance question. However, no such dead hand of the past impedes litigation in Illinois. There has been litigation at the local court level in Illinois, but none of it has reached the state supreme court level. So we repeat the injunction: "Sue yesterday, sue now and sue tomorrow." It would help to have a good constitutional basis upon which to bring such a challenge; and, in the final section of this report, we turn to the question of the wording in the education article of the Illinois constitution.

The Education Article

The previous section of this study advocates litigation as a means of increasing the funding levels for education in Illinois. However, there has to be a constitutional basis for that litigation. As Franklin and others have made clear, the constitutional basis of this litigation is normally either the equal protection clause of the state constitution, or the education article of the state constitution, or both. McCarthy and Deignan have found certain key words to be present in the education articles of most states.[13] The word "uniform" appears in 15 states; the word "efficient" in 12 states; "general," in ten states; "suitable," in nine states; "thorough," in nine states; and last, but far from least, "adequate" or "sufficient," in four states. The words "high quality" also appear in three states. The four states using "adequate" or "sufficient" are Georgia, Idaho, New Mexico, and Wyoming.

Illinois does use "efficient" and "high quality" in the present education article. Article Ten, Section One, reads as follows:

> A fundamental goal of the People of the State is the educational development of all persons to the limits of their capacities. The State shall provide for an efficient system of high quality public educational institutions and services. Education in public schools through the secondary level shall be free. There may be such other free education as the General Assembly provides by law. The State has the primary responsibility for financing the system of public education.

We feel, however, that a stronger statement concerning the basic right of a citizen to an education needs to be made. Hopefully this stronger statement will help arrest the slide into oblivion that the data show has occurred in Illinois in the last ten years. It is, of course, perfectly true that constitutions do not enforce themselves. They are interpreted by judges, who are usually all too aware of the weaknesses of the judicial branch vis-a-vis the other two branches of government. As a West Virginia judge wrote recently in West Virginia Education Association v. the Legislature of West Virginia: "We do not today order the Governor to do any act. We do not today order the Legislature to do any act. The law presumes the Governor to know his duty....the law presumes the Legislature to know its duty, too."[14] Solomon could not have done better. However, if this West Virginia Solomon is correct, then the law had better spell out in decisive and clear language just what those duties are to be relative to education.

Selecting the wording for a new state education article is obviously not a task for a small group of academics located in a state university. However, since a start has to be made somewhere, we will suggest the following replacement for the current Article, in the full knowledge, and indeed in the hope, that the text will be polished to a finer luster by many potential authors. Since there must be some truth in consensus, we have tried to incorporate, as best we could, as many of the words that were found by McCarthy and Deignan, as noted above.

Proposed new education article:

> The State shall provide for a uniform, efficient, and thorough system of public schools which shall be free through the secondary level. The right to an education being fundamental to the exercise of all other constitutional rights, there exists a basic right of all citizens to an adequate primary and secondary education. The General Assembly shall provide such education beyond the secondary level as it deems necessary to the general welfare and shall guarantee equal access to education beyond the secondary level for those who have the capacity to profit by this exposure. By adequate provision for such primary, secondary, and postsecondary education the fundamental goal of the People of the State is the educational development of all persons to the limits of their capacities.[15]

That statement is a bit longer than the present article, but we doubt not that it will become shortened as it travels the long way that it must go before becoming the fundamental law of the land. Before the last general election, there existed two paths that this new education article might take. One path would have been for it to have become a part of a the agenda of a new constitutional convention. That path was abruptly ended when the people decided not to hold another constitutional convention for another twenty years. Therefore, only the path of amendment to the present constitution lies open to the proposed new article. To obtain the necessary three-fifths vote required to put it on the ballot will not be an easy task. It will require a state-wide organization with the support of more than simply the organized educational groups. Still, there is a reason to attempt this Herculean task. It is reasonably possible that the pressure on the legislature brought about by a constitutional amendment movement would equal the pressure brought on the state legislatures by the litigation process, and we have shown in this study that litigation was effective in increasing educational finance. Moreover, there is no reason to believe that a constitutional amendment movement would not be effective in increasing funding, whether it ever became a part of the constitution or not.

It is the business and commercial community that needs to rally behind this new constitutional provision for education, not the educational professionals. If only educational lobbies work for this amendment, it will be viewed as self-serving and merely a way of building a larger public bureaucracy. But it is self-serving for the business and commercial community as well. A number of economic studies have demonstrated that the general economic well-being of the state is a function of its investment in human capital.[16] Most business men know that there is no way that Illinois can survive in a highly competitive world with an uneducated and unskilled work force. There is no way to "develop" Illinois without a strong educational component to that development. We have made it abundantly clear that no such investment in education has been made in Illinois in the last decade. Therefore, Illinois has not had the economic development that all of us desire and Illinois will not have that economic development until it invests adequately in human resources at all three educational levels: primary, secondary, and postsecondary education. We consciously repeat: Illinois has given no priority to educational spending that we can document. Any assertion that is has given such priority is contradicted by the facts. Any responsible chief executive officer who bothers to look at the educational finance facts could not possibly justify locating his firm in a state that invests so poorly in education. That we in Illinois do continue to get new plants and business locations must be because of its geographic logistics or super salesmanship because it cannot be due to public investment in the work force.

We have stressed the negative effects of underinvestment in education on the world of business and commerce because we think our message is apt best to be heard in that quarter. In addition, we are aware, of course, that there are other serious effects of underinvestment in

education that have only indirectly to do with the health of the business climate in the United States, generally, and in Illinois, particularly. Early in this series, we made a statement of the importance of educational investment to the health of the political process; and, indeed, tried to write an exegeses on the favorite theme of John Dewey: to wit, a viable democracy is not possible without a strong and well financed public educational system.[17] A sociological theme we have not touched upon so far in this series, but one which we do strongly believe in, concerns the increasing heterogeneous nature of the Illinois population and the increasing responsibility of public education to provide some common basis to hold together that increasingly fractionalized society. The Illinois State Board of Education has recently released a study indicating the large minority populations that can be expected in the next few years.[18] If their projections are correct, the white, Anglo-Saxon majority in the Illinois schools will become a minority in Illinois schools on or before the year 2010. The schools of Illinois are facing a challenge similar to that which they faced at the end of the 19th century: they must provide the "acculturation" or "melting pot" function. In our laudable attempt to maintain individual differences in a "pluralistic" society, we often forget that without shared values, at least agreed upon in part by most of the people, there exists no society at all. The life expectancy of such a fractionalized society is not great. If it does not self-destruct, it will likely become prey to other hostile societies in the world. We return here to a basic argument that is found in much of this MacArthur/Spencer series: investment in education is simply investment in self-preservation. There is a survival of the fittest in this world. Social Darwinism may be rejected at the individual level; but, at the national level, it is far too dangerous to reject it entirely. So for good political, economic, and social reasons we believe we are required to sound the alarm in case educational investment falls too far behind in Illinois. It would surely be better if others gave this alarm rather than a group of college professors. We are obviously open to the charge of feathering our own nests, of pleading a self-serving case, of overstating the amount of underinvestment, and, fundamentally, to the mistake of the boy who cried "Wolf" too often. All right, perhaps we have overstated the case, but we believe the risks of underinvestment in education far outstrip the risks of overinvestment in education. Again, we rely, on the dialectical process of intellectual life to show us where we have erred.

Conclusions

Regrettably, we have concluded that Illinois has an abysmal record in funding public education. Illinois is not alone in that abject condition. In the process of the analysis, we have identified other states whose records are just as bad; in fact, in a few cases, even worse. We have also identified many other states which have a much better record in funding education. We assume that the states with the good record for funding education and thus investing in their human resources will be rewarded by gains in economic development and in progress in their business and commercial relationships. By the same token, we assume that Illinois and the other "guilty governments" will suffer a decline in business and commercial matters. We have also touched upon some negative, non-commercial aspects of underinvestment in education. To prevent that from happening we have here urged litigation to remind the Governor and the General Assembly of their duties with respect to educational funding, and we have also suggested a change in the education article of the state constitution which would act as a basis for that reminder. To be sure, this is an advocative, aggressive stance for which we will receive some criticisms in those quarters that believe college professors should somehow stand above the battle. But the stakes in this poker game are just too great to remain above the battle. Besides, William Tecumseh Sherman was correct: "The best defense is a good offense."

Since we began with Dickens, we will end with Dickens--not by quotation but only by pointing out that even old Scrooge would have realized that underfunding education was bad for business. Even before his corrective visitation by the three ghosts of Christmas Past, Present,

and Future, he would have been unlikely to have done anything so stupid as we in Illinois have done for the last ten years. Hopefully, we have rattled enough chains in this monograph that someone will hear them. We will then avoid that dire and grim spectre of Christmas Future which we believe presently stretches before Illinois. Tiny Tim, we tried; we tried.

NOTES AND REFERENCES

[1]From the introduction to Charles Dickens, Christmas Books, by Christopher Hibbert. (London: Folio Society) 1988.

[2]Hardy, Thomas. Tess of the d'Urbervilles. (London: Folio Society), Edition of 1988.

[3]Scott, Sir Walter, Bt., Heart of Midlothian.

[4]Shakespeare, William. Macbeth, Act V, Scene 5.

[5]Ward, James Gordon. The Concept of Adequacy in Illinois School Finance. (Normal, IL: Center for the Study of Educational Finance), 1987.

[6]Shakespeare, William. Othello, Act III, Scene 3.

[7]McMahon, Walter W. Geographic Cost of Living Differences: An Update. (Normal, IL: Center for the Study of Educational Finance), 1988

[8]Gunter, Deborah. "An Analysis of Financial Support to Education: Illinois," unpublished doctoral dissertation, Illinois State University, 1988.

[9]Ferber, Robert and P. J. Verdoorn. Research Methods in Economics and Business. (New York, NY: Macmillan Publishing Company), 1962.

[10]Franklin, David L. The Constitutionality of the K-12 Funding System in Illinois. (Normal, IL: Center for the Study of Educational Finance), 1987.

[11]For example, see: Lewis-Beck, M. S. and John R. Alford, "Can Government Regulate Safety? The Coal Mine Example," American Political Science Review, Vol. 74 (Sept 1980) pp. 745-756; also Lewis-Beck, M. S., "Some Economic Effects of Revolution," American Journal of Sociology, Vol. 84 (March 1979) No. 5, pp. 1127-1149.

[12]Elsewhere in this series, we have expressed the view that the State of Illinois is vulnerable to a suit on "equity" grounds since the equity indexes, which the Center has computed for 17 years, show a constant decline in school finance equity in Illinois since about 1976. See: G. Alan Hickrod, et al. Documenting a Disaster: Equity and Adequacy in Illinois School Finance. (Normal, IL: Center for the Study of Educational Finance), 1987.

[13]McCarthy, Martha and Paul Deignan. What Legally Constitutes an Adequate Public Education? Phi Delta Kappa Foundation, 1982.

[14]West Virginia Education Association v. The Legislature of West Virginia. February 28, 1988.

[15]As this monograph was going to press, word was received of the passage of "Proposition 98" in California. Thus, California becomes the first state in the nation to specify in its constitution a stated percentage of the state budget that must be spent for K-12 and community college education. Proponents herald this as a triumph that will assure "adequate" education; opponents claim it is "fiscal irresponsibility" and will short non-educational public services in California for decades. This will require much more study, and we decline to take a position on this controversial measure at this point in time. Obviously, however, any movement to change the education article in Illinois state constitution will have to deal with this difficult issue. See Education Week, November 16, 1988.

[16]This is no place to review the vast literature on human capital formation nor the effect of investment in education on state development. Almost any issue of the Journal of Human Resources or the Economics of Education Review will help if the reader is unfamiliar with that literature. However, we cannot pass without noting a particularly appropriate study for Illinois on this score: Schaeffer, Peter V. and William H. Sander, III, "Investment in Education: Payoffs in Employment Growth," Policy Forum (Urbana, IL: Institute of Government and Public Affairs, University of Illinois), Vol. I, No. 1, 1988.

[17]Hickrod, G. Alan and James G. Ward. Two Essays on the Political and Normative Aspects of American School Finance. (Normal, IL: Center for the Study of Educational Finance), 1987.

[18]Yong, Richard, et al. Illinois School Enrollment Now and in the Year 2000. (Springfield, IL: Illinois State Board of Education), 1988.

Table 1: RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN EXPENDITURES PER ADA FOR GRADES K-12.

State	FY1977-78 Expenditures Per ADA Dollars	Rank	FY1987-88 Expenditures Per ADA Dollars	Rank	Rank Changes
Alabama	1,163	44	2,610	47	-3
Alaska	2,938	1	8,842	1	0
Arizona	1,446	25	2,784	45	-20
Arkansas	1,112	49	2,795	44	5
California	1,595	19	3,751	26	-7
Colorado	1,556	20	4,129	17	3
Connecticut	1,888	5	5,552	5	0
Delaware	1,875	7	4,776	7	0
Florida	1,483	24	4,056	19	5
Georgia	1,187	43	3,167	39	4
Hawaii	1,689	15	4,372	13	2
Idaho	1,158	45	2,555	48	-3
Illinois	1,876	6	3,980	20	-14
Indiana	1,269	35	3,379	34	1
Iowa	1,669	16	3,740	27	-11
Kansas	1,510	23	4,137	16	7
Kentucky	1,155	46	3,107	40	6
Louisiana	1,248	38	3,237	36	2
Maine	1,333	32	3,650	28	4
Maryland	1,659	17	4,659	10	7
Massachusetts	1,992	4	4,856	6	-2
Michigan	1,737	13	3,954	21	-8
Minnesota	1,777	9	4,241	14	-5
Mississippi	1,072	50	2,534	49	1
Missouri	1,300	33	3,345	35	-2
Montana	1,755	10	4,070	18	-8
Nebraska	1,534	22	3,437	32	-10
Nevada	1,423	27	3,768	25	2
New Hampshire	1,261	37	3,386	33	4
New Jersey	2,104	3	6,120	4	-1
New Mexico	1,354	31	3,537	30	1
New York	2,333	2	6,299	2	0
North Carolina	1,210	40	3,473	31	9
North Dakota	1,391	29	3,209	37	-8
Ohio	1,403	28	3,769	24	4
Oklahoma	1,261	36	2,701	46	-10
Oregon	1,600	18	4,236	15	3
Pennsylvania	1,862	8	4,752	8	0
Rhode Island	1,551	21	4,574	11	10
South Carolina	1,208	41	3,005	41	0
South Dakota	1,280	34	3,190	38	-4
Tennessee	1,146	48	2,842	43	5
Texas	1,154	47	3,584	29	18
Utah	1,243	39	2,455	50	-11
Vermont	1,440	26	4,459	12	14
Virginia	1,368	30	3,809	22	8
Washington	1,694	14	3,806	23	-9
West Virginia	1,194	42	2,959	42	0
Wisconsin	1,743	12	4,701	9	3
Wyoming	1,749	11	6,229	3	8
Totals	75,948		196,578		

Map 1

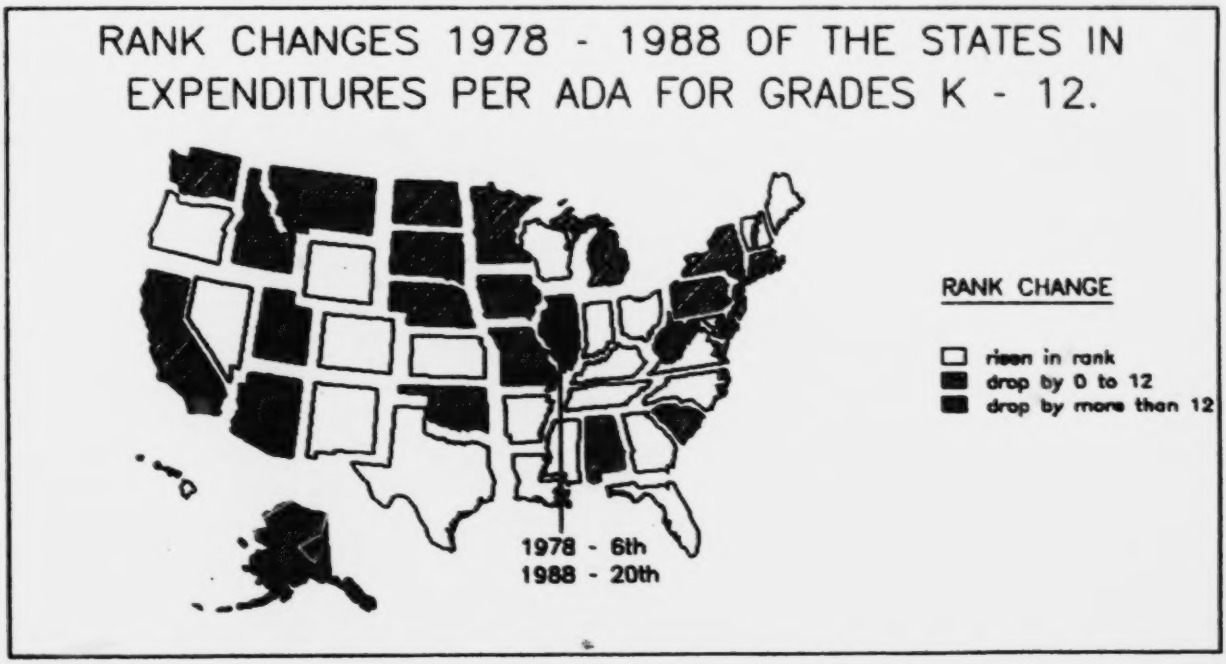
RANK CHANGES 1978 - 1988 OF THE STATES IN EXPENDITURES PER ADA FOR GRADES K - 12.
RANK CHANGE
risen in rank
drop by 0 to 12
drop by more than 12
1978 - 6th
1988 - 20th

Table 2: RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN EXPENDITURE PER ADA FOR GRADES K-12: ADJUSTED BY THE MCMAHON INDEX

States	FY1977-78 Expenditures Per ADA Dollars	Rank	FY1987-88 Expenditures Per ADA Dollars	Rank	Rank Changes
Alabama	1,256	37	3,003	46	-9
Alaska	*	*	*	*	*
Arizona	1,372	25	3,164	42	-17
Arkansas	1,223	43	3,296	41	2
California	1,392	21	3,404	37	-16
Colorado	1,456	19	4,064	18	1
Connecticut	1,477	18	4,488	9	9
Delaware	1,588	12	4,696	6	6
Florida	1,513	17	4,477	10	7
Georgia	1,234	41	3,519	31	10
Hawaii	*	*	*	*	*
Idaho	1,130	47	2,871	48	-1
Illinois	1,713	4	3,695	28	-24
Indiana	1,239	40	3,498	32	8
Iowa	1,643	10	3,649	29	-19
Kansas	1,515	15	4,221	16	-1
Kentucky	1,148	46	3,483	33	13
Louisiana	1,303	32	3,729	27	5
Maine	1,366	26	3,883	20	6
Maryland	1,378	23	4,259	13	10
Massachusetts	1,740	3	4,260	12	-9
Michigan	1,622	11	3,869	23	-12
Minnesota	1,658	8	4,051	19	-11
Mississippi	1,177	44	3,105	44	0
Missouri	1,267	36	3,456	34	2
Montana	1,707	5	4,443	11	-6
Nebraska	1,514	16	3,427	36	-20
Nevada	1,253	38	3,881	21	17
New Hampshire	1,113	48	3,323	39	9
New Jersey	1,697	6	5,139	3	3
New Mexico	1,339	28	4,231	15	13
New York	1,987	1	5,690	2	-1
North Carolina	1,289	33	3,876	22	11
North Dakota	1,344	27	3,392	38	-11
Ohio	1,319	30	3,743	26	4
Oklahoma	1,383	22	3,094	45	-23
Oregon	1,534	14	4,257	14	0
Pennsylvania	1,840	2	4,738	4	-2
Rhode Island	1,409	20	4,515	8	12
South Carolina	1,285	34	3,539	30	4
South Dakota	1,284	35	3,434	35	0
Tennessee	1,230	42	3,161	43	-1
Texas	1,241	39	4,115	17	22
Utah	1,155	45	2,895	47	-2
Vermont	1,338	29	4,699	5	24
Virginia	1,372	24	3,764	24	0
Washington	1,560	13	3,750	25	-12
West Virginia	1,318	31	3,310	40	-9
Wisconsin	1,644	9	4,650	7	2
Wyoming	1,675	7	6,502	1	6
Total	68,237		187,706		

Map 2

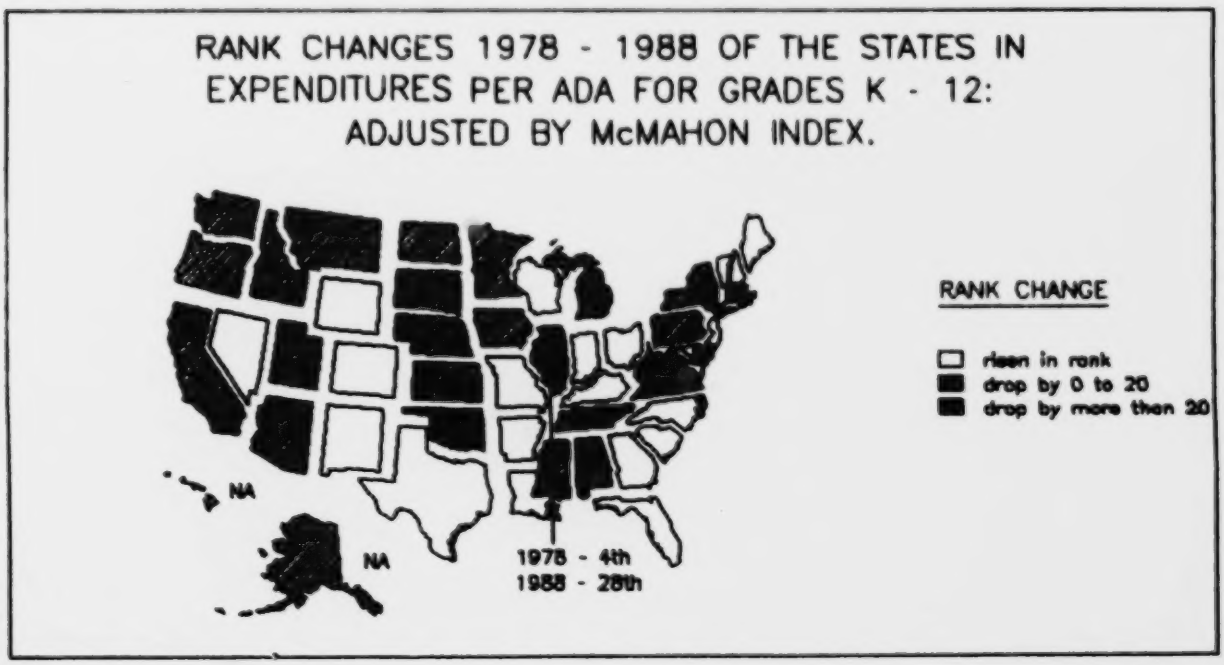
RANK CHANGES 1978 - 1988 OF THE STATES IN EXPENDITURES PER ADA FOR GRADES K - 12: ADJUSTED BY McMAHON INDEX.
NA
NA
1978 - 4th
1988 - 28th
RANK CHANGE
risen in rank
drop by 0 to 20
drop by more than 20

Table 3: RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN PER CAPITA EXPENDITURES FOR GRADES K-12

States	FY1977-78 Expenditures Per Capita Dollars	Rank	FY1987-88 Expenditures Per Capita Dollars	Rank	Rank Changes	States	FY1977-78 Expenditures Per Capita Dollars	Rank	FY1987-88 Expenditures Per Capita Dollars	Rank	Rank Changes
Alabama	245	47	488	48	-1	Montana	386	10	781	6	4
Alaska	752	1	1,840	1	0	Nebraska	304	34	578	36	-2
Arizona	332	23	471	50	-27	Nevada	320	27	612	28	-1
Arkansas	239	48	540	43	5	New Hampshire	257	45	514	46	-1
California	364	15	625	26	-11	New Jersey	404	7	851	4	3
Colorado	359	17	711	14	3	New Mexico	370	13	775	7	6
Connecticut	382	12	824	5	7	New York	441	4	857	3	1
Delaware	399	9	683	18	-9	North Carolina	312	30	558	40	-10
Florida	270	39	557	41	-2	North Dakota	292	37	591	30	7
Georgia	253	46	562	39	7	Ohio	313	29	626	25	4
Hawaii	345	20	651	23	-3	Oklahoma	279	38	541	42	-4
Idaho	328	24	585	32	-8	Oregon	323	25	682	19	6
Illinois	411	6	583	34	-28	Pennsylvania	385	11	679	20	-9
Indiana	311	31	603	29	2	Rhode Island	314	28	584	33	-5
Iowa	363	16	631	24	-8	South Carolina	270	40	565	38	2
Kansas	302	36	707	15	21	South Dakota	304	33	588	31	2
Kentucky	232	49	527	44	5	Tennessee	265	43	485	49	-6
Louisiana	267	42	581	35	7	Texas	268	41	762	9	32
Maine	310	32	657	22	10	Utah	368	14	706	16	-2
Maryland	358	18	695	17	1	Vermont	341	22	712	13	9
Massachusetts	401	8	676	21	-13	Virginia	321	26	621	27	-1
Michigan	420	5	713	12	-7	Washington	353	19	769	8	11
Minnesota	446	3	755	10	-7	West Virginia	302	35	567	37	-2
Mississippi	228	50	508	47	3	Wisconsin	342	21	714	11	10
Missouri	257	44	520	45	-1	Wyoming	447	2	1,490	2	0
						Total	16,853		33,900		

Map 3

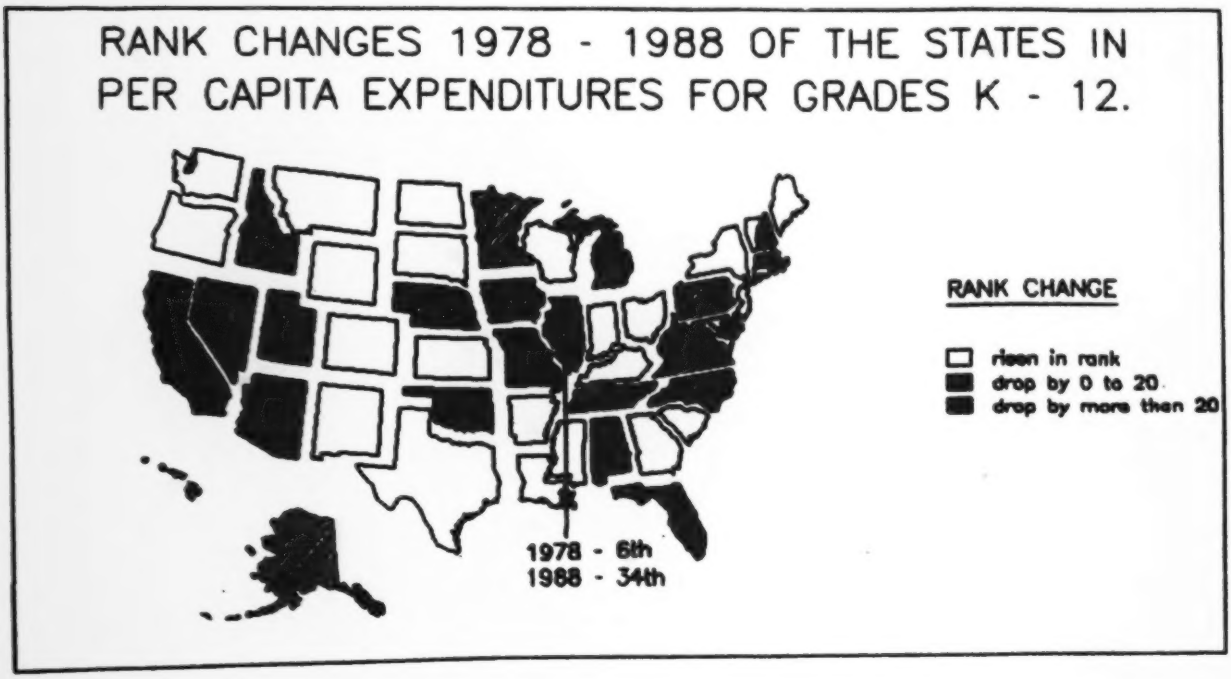
RANK CHANGES 1978 - 1988 OF THE STATES IN PER CAPITA EXPENDITURES FOR GRADES K - 12.
1978 - 6th
1988 - 34th
RANK CHANGE
risen in rank
drop by 0 to 20
drop by more than 20

Table 4: RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN PER CAPITA EXPENDITURES FOR GRADES K-12: ADJUSTED BY THE MCMAHON INDEX

States	FY1977-78 Expenditures Per Capita Dollars	Rank	FY1987-88 Expenditures Per Capita Dollars	Rank	Rank Changes
Alabama	264	42	562	43	-1
Alaska	*	*	*	*	*
Arizona	315	24	535	47	-23
Arkansas	263	44	637	23	21
California	317	21	567	42	-21
Colorado	336	13	699	13	0
Connecticut	299	31	666	20	11
Delaware	338	12	672	18	-6
Florida	276	41	615	36	5
Georgia	263	43	624	30	13
Hawaii	*	*	*	*	*
Idaho	320	20	657	22	-2
Illinois	375	7	542	44	-37
Indiana	304	28	624	29	-1
Iowa	357	9	616	35	-26
Kansas	303	29	722	9	20
Kentucky	231	47	590	39	8
Louisiana	279	40	670	19	21
Maine	317	22	699	14	8
Maryland	298	32	635	24	8
Massachusetts	350	10	593	38	-28
Michigan	392	3	698	15	-12
Minnesota	416	2	721	10	-8
Mississippi	250	46	622	32	14
Missouri	251	45	537	46	-1
Montana	375	6	853	4	2
Nebraska	300	30	577	40	-10
Nevada	282	39	630	27	12
New Hampshire	226	48	504	48	0
New Jersey	326	16	714	11	5
New Mexico	366	8	927	2	6
New York	376	5	774	6	1
North Carolina	332	15	622	31	-16
North Dakota	283	38	624	28	10
Ohio	295	33	622	33	0
Oklahoma	305	26	619	34	-8
Oregon	310	25	686	16	9
Pennsylvania	380	4	677	17	-13
Rhode Island	286	36	577	41	-5
South Carolina	287	35	665	21	14
South Dakota	305	27	633	26	1
Tennessee	285	37	540	45	-8
Texas	289	34	874	3	31
Utah	342	11	832	5	6
Vermont	317	23	750	8	15
Virginia	322	19	614	37	-18
Washington	325	17	758	7	10
West Virginia	333	14	634	25	-11
Wisconsin	323	18	706	12	6
Wyoming	428	1	1,555	1	0
Total	15,109	*n=48	32,472	*n=48	*n=48

Map 4

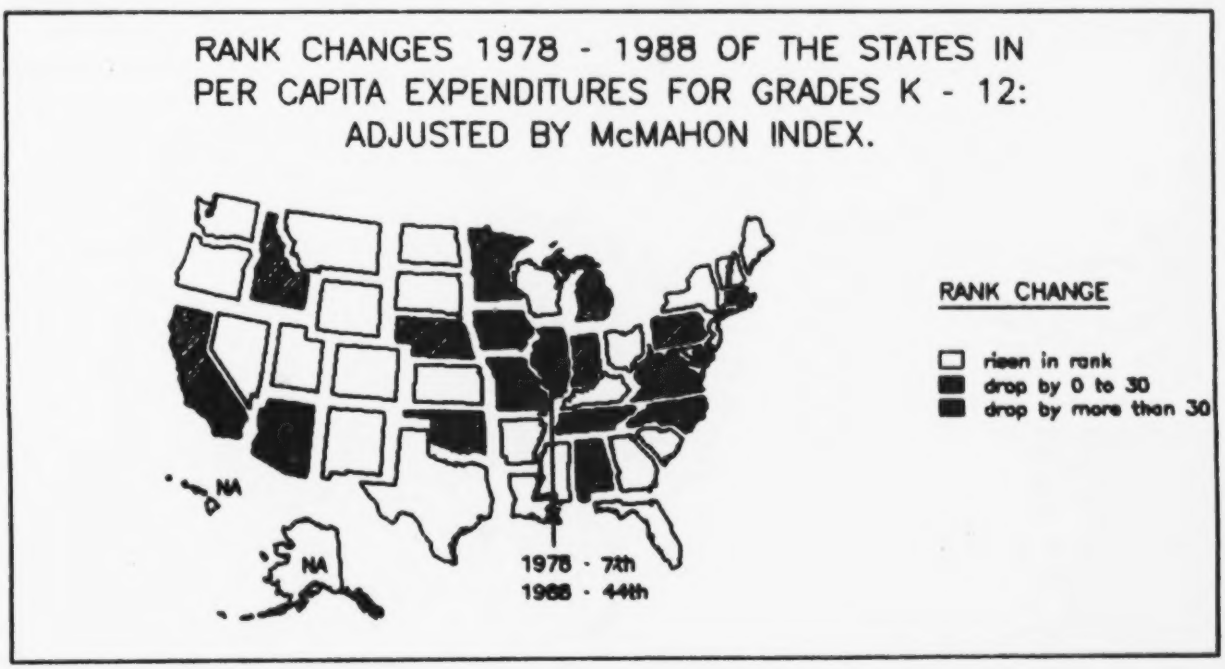
RANK CHANGES 1978 - 1988 OF THE STATES IN PER CAPITA EXPENDITURES FOR GRADES K - 12: ADJUSTED BY McMAHON INDEX.
RANK CHANGE
risen in rank
drop by 0 to 30
drop by more than 30
NA
NA
1978 - 7th
1988 - 44th

Table 5. RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN APPROPRIATIONS PER FTE FOR HIGHER EDUCATION

States	FY1977-78 Appropriations Per FTE Dollars	Rank	FY1987-88 Appropriations Per FTE Dollars	Rank	Rank Changes	States	FY1977-78 Appropriations Per FTE Dollars	Rank	FY1987-88 Appropriations Per FTE Dollars	Rank	Rank Changes
Alabama	2,210	10	3,556	22	-12	Montana	1,886	24	3,430	29	-5
Alaska	2,634	2	5,962	2	0	Nebraska	1,955	21	2,706	44	-23
Arizona	1,212	49	2,303	50	-1	Nevada	1,365	45	2,421	48	-3
Arkansas	2,031	17	4,059	15	2	New Hampshire	1,191	50	2,328	49	1
California	1,337	47	3,111	35	12	New Jersey	1,706	30	4,298	11	19
Colorado	1,604	34	2,800	41	-7	New Mexico	1,841	27	3,330	31	-4
Connecticut	2,045	16	4,191	13	3	New York	2,398	6	5,122	4	2
Delaware	1,674	32	3,507	27	5	North Carolina	2,272	8	4,889	6	2
Florida	1,574	36	3,543	23	13	North Dakota	2,047	15	3,386	30	-15
Georgia	2,185	11	5,157	3	8	Ohio	1,572	37	3,288	32	5
Hawaii	2,521	4	5,979	1	3	Oklahoma	1,350	46	2,592	46	0
Idaho	2,452	5	3,916	18	-13	Oregon	1,528	39	2,780	43	-4
Illinois	1,392	35	2,510	47	-12	Pennsylvania	2,383	7	3,866	19	-12
Indiana	2,007	20	3,630	20	0	Rhode Island	1,869	25	3,608	21	4
Iowa	2,768	1	3,997	17	-16	South Carolina	2,225	9	4,816	7	2
Kansas	1,663	33	2,782	42	-9	South Dakota	1,928	22	3,080	37	-15
Kentucky	2,015	19	4,342	10	9	Tennessee	1,791	29	4,277	12	17
Louisiana	1,864	26	3,517	26	0	Texas	1,821	28	3,255	33	-5
Maine	1,525	40	4,104	14	26	Utah	2,149	14	3,520	25	-11
Maryland	1,457	44	3,082	36	8	Vermont	1,313	48	2,668	45	3
Massachusetts	1,505	42	5,013	5	37	Virginia	1,462	43	3,447	28	15
Michigan	1,562	38	2,946	39	-1	Washington	1,525	41	3,174	34	7
Minnesota	2,556	3	4,562	9	-6	West Virginia	2,018	18	3,527	24	-6
Mississippi	2,158	12	4,026	16	-4	Wisconsin	1,909	23	2,880	40	-17
Missouri	1,704	31	2,981	38	-7	Wyoming	2,155	13	4,811	8	5
						Total	93,514		183,075		

Map 5

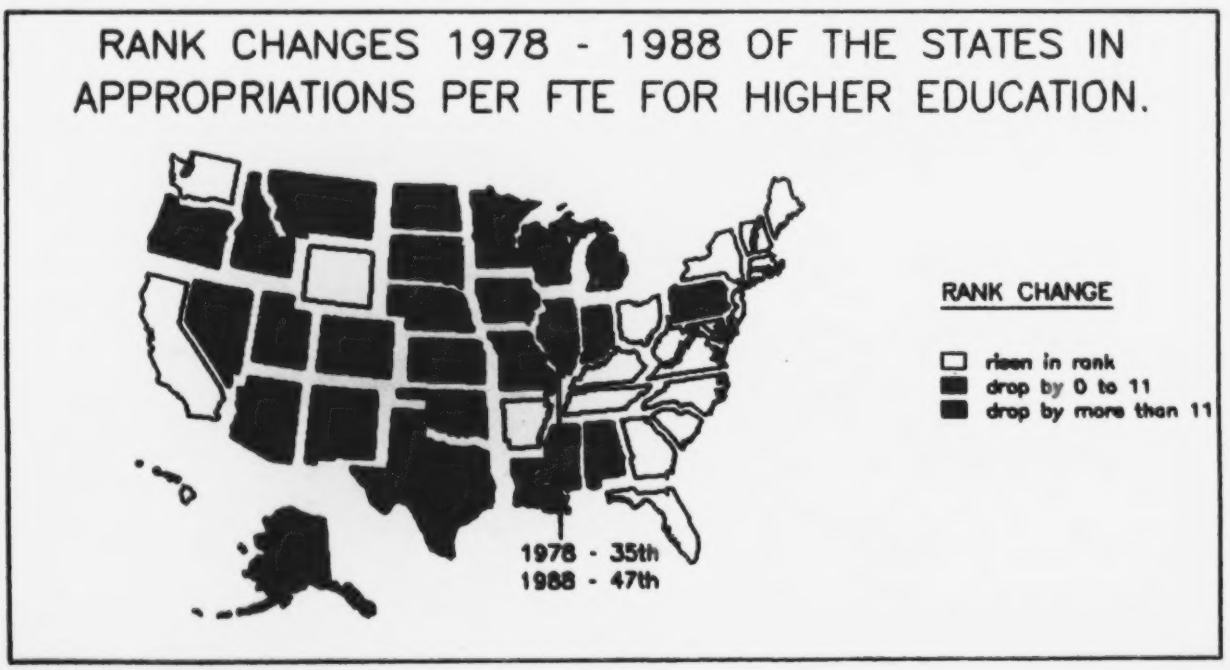
RANK CHANGES 1978 - 1988 OF THE STATES IN APPROPRIATIONS PER FTE FOR HIGHER EDUCATION.
1978 - 35th
1988 - 47th
RANK CHANGE
risen in rank
drop by 0 to 11
drop by more than 11

Table 6. RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN APPROPRIATIONS PER FTE FOR HIGHER EDUCATION: ADJUSTED BY THE MCMAHON INDEX.

State	FY1977-78 Appropriations Per FTE Dollars	Rank	FY1987-88 Appropriations Per FTE Dollars	Rank	Rank Changes
Alabama	2,387	4	4,092	15	-11
Alaska	*	*	*	*	*
Arizona	1,150	47	2,617	45	2
Arkansas	2,235	10	4,787	7	3
California	1,166	46	2,823	39	7
Colorado	1,501	32	2,756	43	-11
Connecticut	1,600	30	3,388	30	0
Delaware	1,417	39	3,449	28	11
Florida	1,606	29	3,911	19	10
Georgia	2,271	9	5,730	1	8
Hawaii	*	*	*	*	*
Idaho	2,392	3	4,400	10	-7
Illinois	1,454	38	2,330	47	-9
Indiana	1,960	17	3,758	22	-5
Iowa	2,725	1	3,900	20	-19
Kansas	1,668	27	2,839	38	-11
Kentucky	2,003	14	4,867	6	8
Louisiana	1,945	19	4,052	16	3
Maine	1,563	31	4,366	12	19
Maryland	1,210	44	2,817	40	4
Massachusetts	1,314	42	4,397	11	31
Michigan	1,459	37	2,882	36	1
Minnesota	2,385	5	4,357	13	-8
Mississippi	2,369	6	4,934	5	1
Missouri	1,661	28	3,079	34	-6
Montana	1,835	23	3,744	23	0
Nebraska	1,930	21	2,697	44	-23
Nevada	1,202	45	2,493	46	-1
New Hampshire	1,051	48	2,285	48	0
New Jersey	1,376	41	3,609	25	16
New Mexico	1,821	24	3,984	17	7
New York	2,042	13	4,626	9	4
North Carolina	2,420	2	5,457	3	-1
North Dakota	1,978	16	3,580	26	-10
Ohio	1,477	34	3,265	32	2
Oklahoma	1,481	33	2,969	35	-2
Oregon	1,465	36	2,794	42	-6
Pennsylvania	2,355	8	3,855	21	-13
Rhode Island	1,697	26	3,562	27	-1
South Carolina	2,367	7	5,672	2	5
South Dakota	1,934	20	3,316	31	-11
Tennessee	1,921	22	4,758	8	14
Texas	1,958	18	3,738	24	-6
Utah	1,997	15	4,151	14	1
Vermont	1,221	43	2,812	41	2
Virginia	1,467	35	3,406	29	6
Washington	1,404	40	3,127	33	7
West Virginia	2,228	11	3,945	18	-7
Wisconsin	1,801	25	2,849	37	-12
Wyoming	2,064	12	5,022	4	8
Total	85,931	*n=48	178,245	*n=48	*n=48

Map 6.

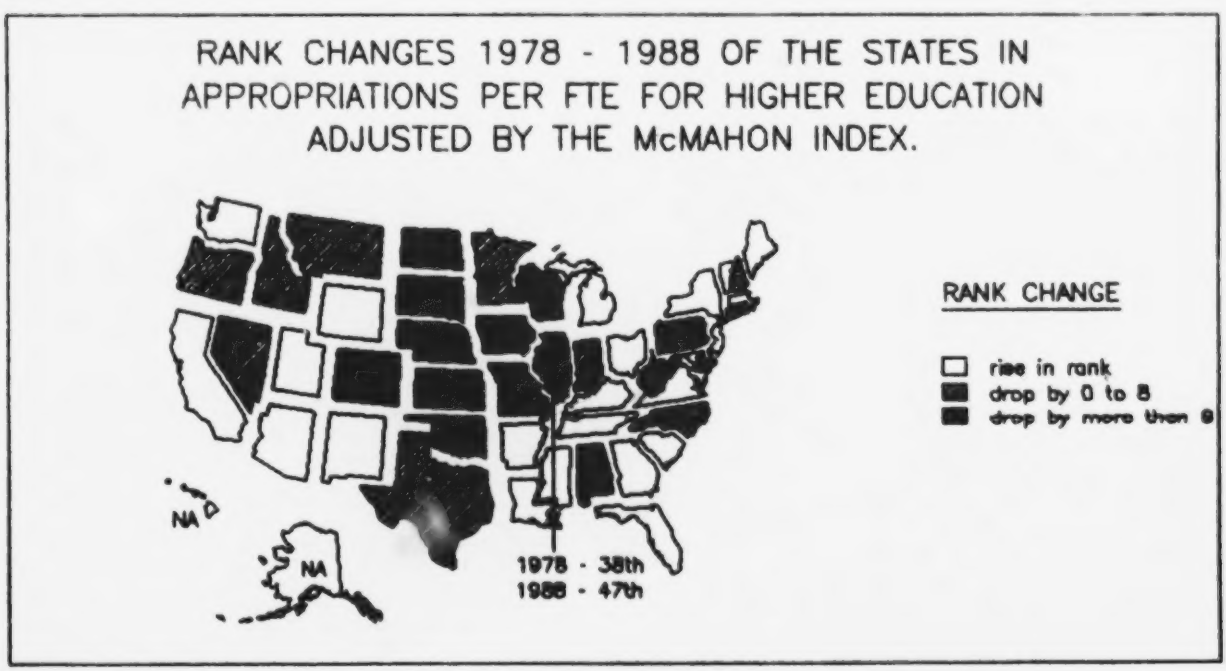
RANK CHANGES 1978 - 1988 OF THE STATES IN APPROPRIATIONS PER FTE FOR HIGHER EDUCATION ADJUSTED BY THE McMAHON INDEX.
NA
NA
1978 - 38th
1988 - 47th
RANK CHANGE
rise in rank
drop by 0 to 8
drop by more than 8

Table 7. RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN APPROPRIATIONS PER CAPITA FOR HIGHER EDUCATION.

States	FY1977-78 Appropriations Per Capita Dollars	Rank	FY1987-88 Appropriations Per Capita Dollars	Rank	Rank Changes	States	FY1977-78 Appropriations Per Capita Dollars	Rank	FY1987-88 Appropriations Per Capita Dollars	Rank	Rank Changes
Alabama	83.42	15	139.73	22	-7	Montana	66.99	28	129.92	32	-4
Alaska	165.97	1	299.34	1	0	Nebraska	83.62	14	143.02	20	-6
Arizona	87.64	9	145.28	19	-10	Nevada	68.25	27	111.77	45	-18
Arkansas	58.22	41	116.88	41	0	New Hampshire	31.67	50	63.29	50	0
California	87.91	8	171.64	8	0	New Jersey	55.16	44	132.08	29	15
Colorado	81.64	16	133.80	27	-11	New Mexico	78.81	20	174.43	7	13
Connecticut	61.22	37	128.99	33	4	New York	73.19	25	164.77	9	16
Delaware	75.67	23	157.36	10	13	North Carolina	83.68	13	200.23	4	9
Florida	56.53	43	113.60	44	-1	North Dakota	94.67	5	175.85	6	-1
Georgia	59.66	40	122.05	37	3	Ohio	51.36	46	117.32	40	6
Hawaii	121.55	2	235.15	2	0	Oklahoma	60.94	39	118.05	39	0
Idaho	85.35	10	139.61	23	-13	Oregon	80.85	17	128.46	34	-17
Illinois	65.87	30	114.97	43	-13	Pennsylvania	56.83	42	98.53	48	-6
Indiana	62.77	34	127.61	35	-1	Rhode Island	68.77	29	129.94	31	-2
Iowa	84.50	12	155.77	11	1	South Carolina	78.27	21	152.12	15	6
Kansas	80.47	19	145.87	18	1	South Dakota	63.16	33	104.43	46	-13
Kentucky	62.29	35	134.03	26	9	Tennessee	61.41	36	131.67	30	6
Louisiana	60.95	38	115.34	42	-4	Texas	80.31	18	132.93	28	-10
Maine	42.04	49	119.13	38	11	Utah	90.05	7	153.11	13	-6
Maryland	65.55	31	135.54	25	6	Vermont	47.19	47	91.22	49	-2
Massachusetts	44.03	48	152.91	14	34	Virginia	63.86	32	155.12	12	20
Michigan	71.93	26	142.72	21	5	Washington	100.25	4	148.52	16	-12
Minnesota	94.65	6	192.10	5	1	West Virginia	74.19	24	124.70	36	-12
Mississippi	77.49	22	137.92	24	-2	Wisconsin	85.29	11	146.75	17	-6
Missouri	53.51	45	98.65	47	-2	Wyoming	100.90	3	233.04	3	0
						Total	3,688.71		7,136.88		

Map 7.

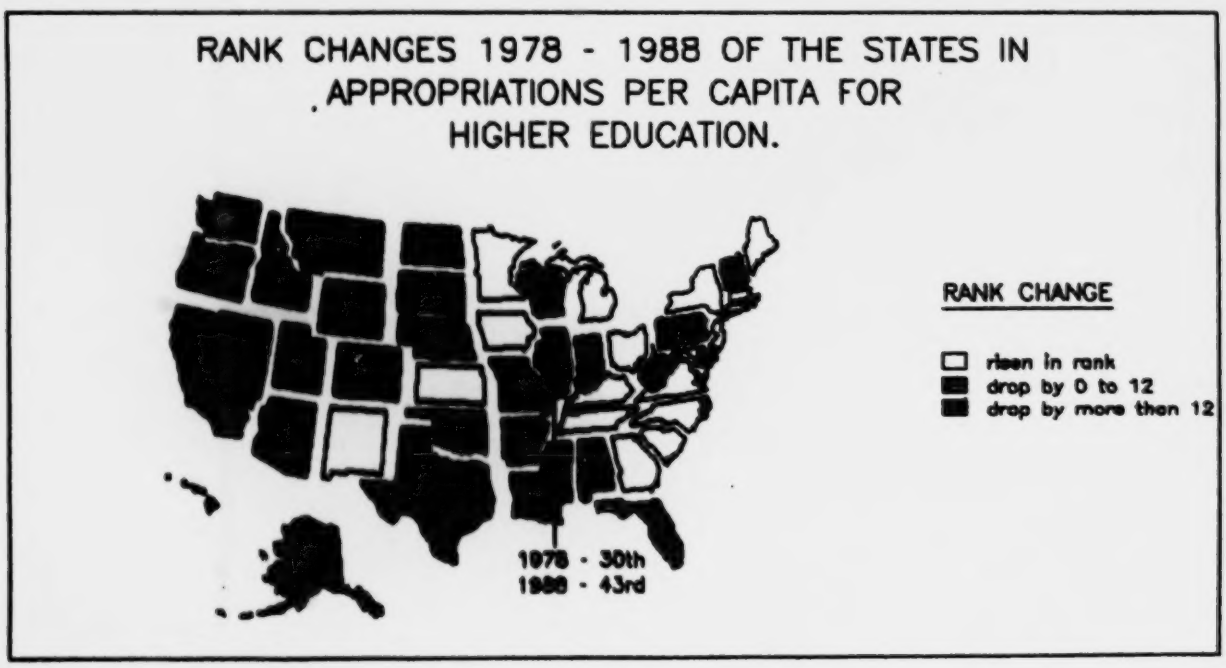
RANK CHANGES 1978 - 1988 OF THE STATES IN APPROPRIATIONS PER CAPITA FOR HIGHER EDUCATION.
1978 - 30th
1988 - 43rd
RANK CHANGE
risen in rank
drop by 0 to 12
drop by more than 12

Table 8. RANK CHANGES IN TWO POINTS IN TIME OF THE STATES IN PER CAPITA APPROPRIATIONS FOR HIGHER EDUCATION: ADJUSTED BY THE MCMAHON INDEX.

States	FY1977-78 Appropriations Per Capita Dollars	Rank	FY1987-88 Appropriations Per Capita Dollars	Rank	Rank Change	States	FY1977-78 Appropriations Per Capita Dollars	Rank	FY1987-88 Appropriations Per Capita Dollars	Rank	Rank Change
Alabama	90.08	4	160.80	10	-6	Montana	65.16	25	141.84	24	1
Alaska	*	*	*	*	*	Nebraska	82.55	14	142.59	23	-9
Arizona	83.15	13	165.09	9	4	Nevada	60.08	37	115.11	40	-3
Arkansas	64.04	28	137.83	27	1	New Hampshire	27.95	48	62.11	48	0
California	76.71	20	155.76	12	8	New Jersey	44.49	44	110.90	42	2
Colorado	76.37	21	131.70	33	-12	New Mexico	77.95	18	208.65	3	15
Connecticut	47.90	43	104.27	44	-1	New York	62.34	31	148.84	19	12
Delaware	64.07	26	154.73	13	13	North Carolina	89.12	5	223.47	2	3
Florida	57.68	38	125.38	37	1	North Dakota	91.47	3	185.89	4	-1
Georgia	62.02	32	135.61	28	4	Ohio	48.27	42	116.51	39	3
Hawaii	*	*	*	*	*	Oklahoma	66.82	23	135.23	29	-6
Idaho	83.27	11	156.65	11	0	Oregon	77.51	19	129.11	34	-15
Illinois	60.15	36	106.75	43	-7	Pennsylvania	56.15	39	98.24	46	-7
Indiana	61.30	34	131.89	32	2	Rhode Island	60.65	35	128.27	35	0
Iowa	83.17	12	151.97	16	-4	South Carolina	83.27	10	179.18	7	3
Kansas	80.71	16	148.85	18	-2	South Dakota	63.35	30	112.41	41	-11
Kentucky	61.92	33	150.26	17	16	Tennessee	65.89	24	146.46	20	4
Louisiana	63.62	29	132.88	31	-2	Texas	86.57	7	152.62	15	-8
Maine	43.08	46	126.74	36	10	Utah	83.69	9	180.55	6	3
Maryland	54.44	40	123.89	38	2	Vermont	43.86	45	96.13	47	-2
Massachusetts	38.46	47	134.13	30	17	Virginia	64.05	27	153.28	14	13
Michigan	67.16	22	139.65	25	-3	Washington	92.31	2	146.32	21	-19
Minnesota	88.30	6	183.48	5	1	West Virginia	81.88	15	139.49	26	-11
Mississippi	85.06	8	169.02	8	0	Wisconsin	80.46	17	145.15	22	-5
Missouri	52.15	41	101.91	45	-4	Wyoming	96.65	1	243.25	1	0
						Total	3,297.33	*n=48	6,870.81	*n=48	*n=48

Map 8.

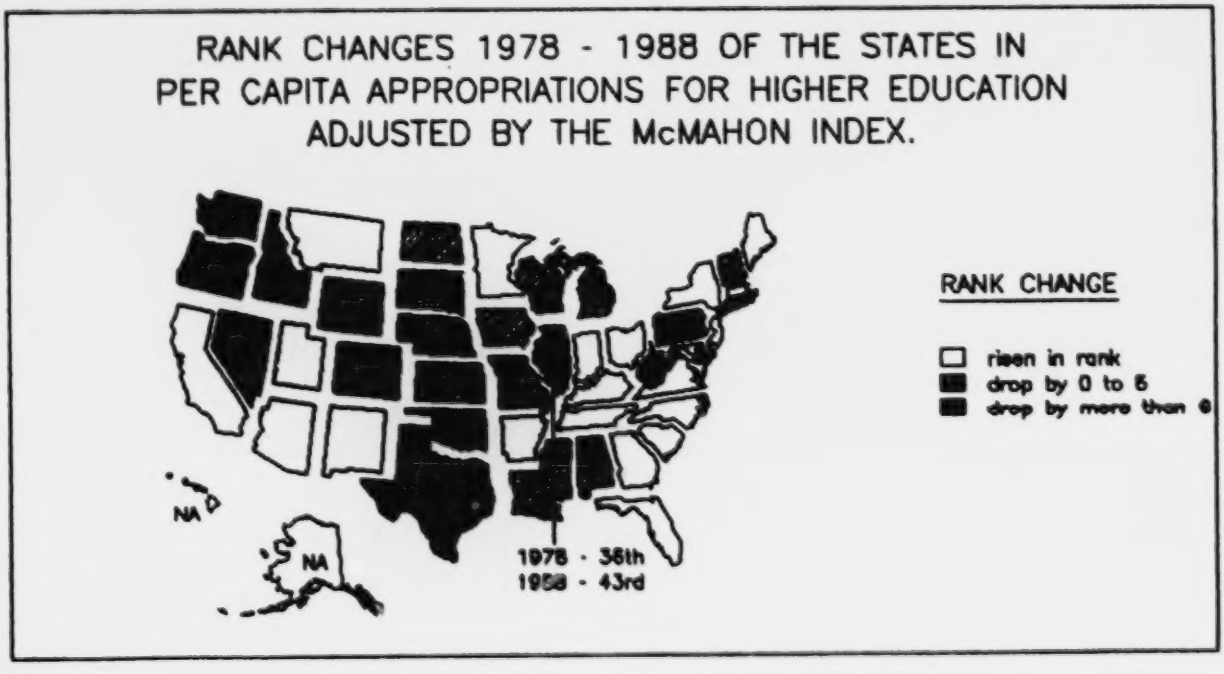

Table 9. ELASTICITY MEASURE COMPARISON OF THE STATES ON LOG/REGRESSION FOR GRADES K-12.

State	Elasticity Measure Log/Regression	Rank	Percent National Average	State	Elasticity Measure Log/Regression	Rank	Percent National Average
Wyoming	1.501	1	177.87	Iowa	0.818	26	96.94
Alaska	1.243	2	147.31	Tennessee	0.816	27	96.71
West Virginia	1.154	3	136.76	Wisconsin	0.815	28	96.59
Texas	1.151	4	136.41	Missouri	0.787	29	93.27
Kentucky	1.116	5	132.26	Mississippi	0.786	30	93.15
Montana	1.057	6	125.27	Michigan	0.771	31	91.37
Oklahoma	1.010	7	119.70	Virginia	0.750	32	88.88
Oregon	1.004	8	118.97	Vermont	0.738	33	87.46
South Carolina	0.990	9	117.33	Rhode Island	0.732	34	86.75
Arkansas	0.935	10	110.81	Idaho	0.732	35	86.75
New Mexico	0.932	11	110.45	Delaware	0.729	36	86.40
North Dakota	0.929	12	110.10	Connecticut	0.723	37	85.68
Ohio	0.926	13	109.74	Pennsylvania	0.719	38	85.21
Washington	0.919	14	108.91	North Carolina	0.695	40	82.37
Alabama	0.917	15	108.68	Florida	0.695	39	82.37
Indiana	0.912	16	108.08	New York	0.693	41	82.19
Kansas	0.908	17	107.61	Nevada	0.691	42	81.89
Georgia	0.905	18	107.25	Colorado	0.687	43	81.42
Louisiana	0.902	19	106.90	Maryland	0.661	44	78.34
Utah	0.900	20	106.66	Illinois	0.652	45	77.27
South Dakota	0.877	21	103.94	Massachusetts	0.643	46	76.20
Nebraska	0.875	22	103.70	California	0.615	47	72.89
New Hampshire	0.871	23	103.22	Hawaii	0.613	48	72.65
New Jersey	0.858	24	101.68	Minnesota	0.521	49	61.74
Maine	0.841	25	99.67	Arizona	0.475	50	56.29
				U.S.Average	0.844		

Map 9.

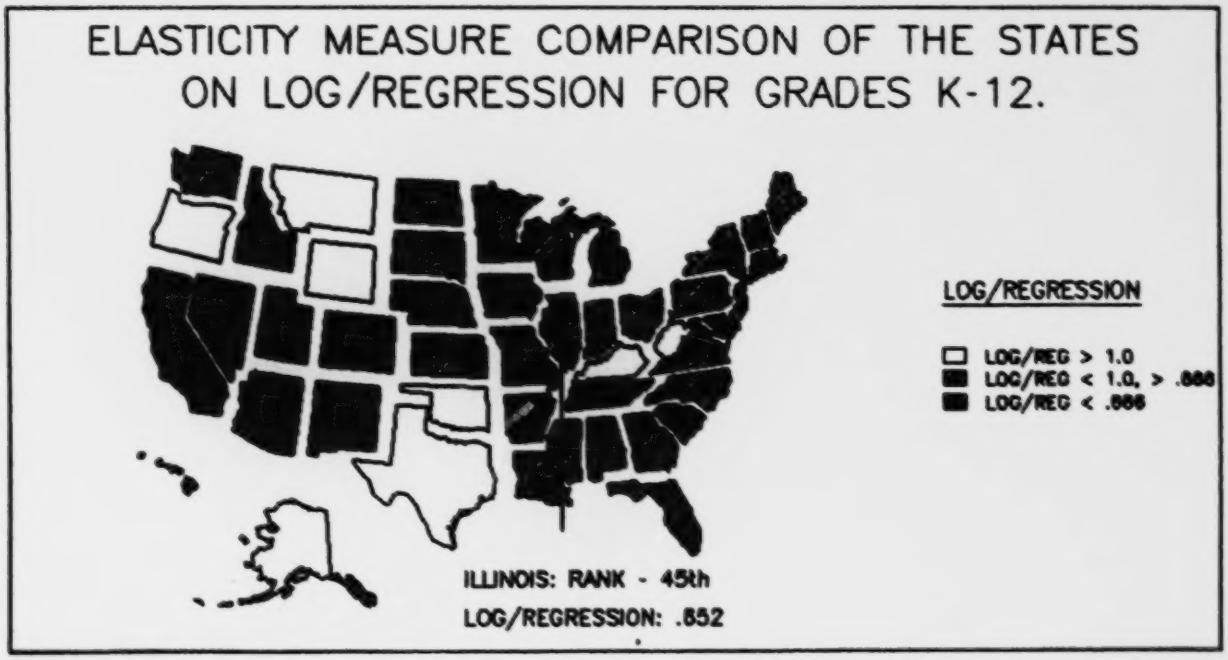

Table 10. ELASTICITY MEASURE COMPARISON OF THE STATES ON LOG/REGRESSION FOR HIGHER EDUCATION.

State	Elasticity Measure Log/Regression	Rank	Percent National Average	State	Elasticity Measure Log/Regression	Rank	Percent National Average
Alaska	1.423	1	163.38	Michigan	0.857	26	98.39
Wyoming	1.305	2	149.83	Iowa	0.855	27	98.16
Massachusetts	1.193	3	136.97	New York	0.852	28	97.82
North Dakota	1.132	4	129.97	Kansas	0.849	29	97.47
Oklahoma	1.116	5	128.13	Indiana	0.847	30	97.24
Tennessee	1.112	6	127.67	Connecticut	0.842	31	96.67
New Mexico	1.092	7	125.37	Illinois	0.835	32	95.87
North Carolina	1.090	8	125.14	Alabama	0.826	33	94.83
Louisiana	1.064	9	122.16	Utah	0.823	34	94.49
Montana	1.055	10	121.13	Florida	0.815	35	93.57
Ohio	1.034	11	118.71	California	0.804	36	92.31
Delaware	1.004	12	115.27	Nebraska	0.791	37	90.82
New Jersey	0.986	13	113.20	Vermont	0.766	38	87.94
Kentucky	0.961	14	110.33	Rhode Island	0.766	39	87.94
West Virginia	0.955	15	109.64	Missouri	0.716	40	82.20
Mississippi	0.933	16	107.12	Wisconsin	0.698	41	80.14
Arkansas	0.933	17	107.12	Arizona	0.653	42	74.97
Minnesota	0.927	18	106.43	New Hampshire	0.628	43	72.10
Hawaii	0.909	19	104.36	Pennsylvania	0.614	44	70.49
Georgia	0.905	20	103.90	South Dakota	0.609	45	69.92
Maryland	0.889	21	102.07	Colorado	0.572	46	65.67
Texas	0.886	22	101.72	Oregon	0.564	47	64.75
Maine	0.883	23	101.38	Washington	0.513	48	58.90
Virginia	0.881	24	101.15	Idaho	0.483	49	55.45
South Carolina	0.869	25	99.77	Nevada	0.475	50	54.54

Map 10.

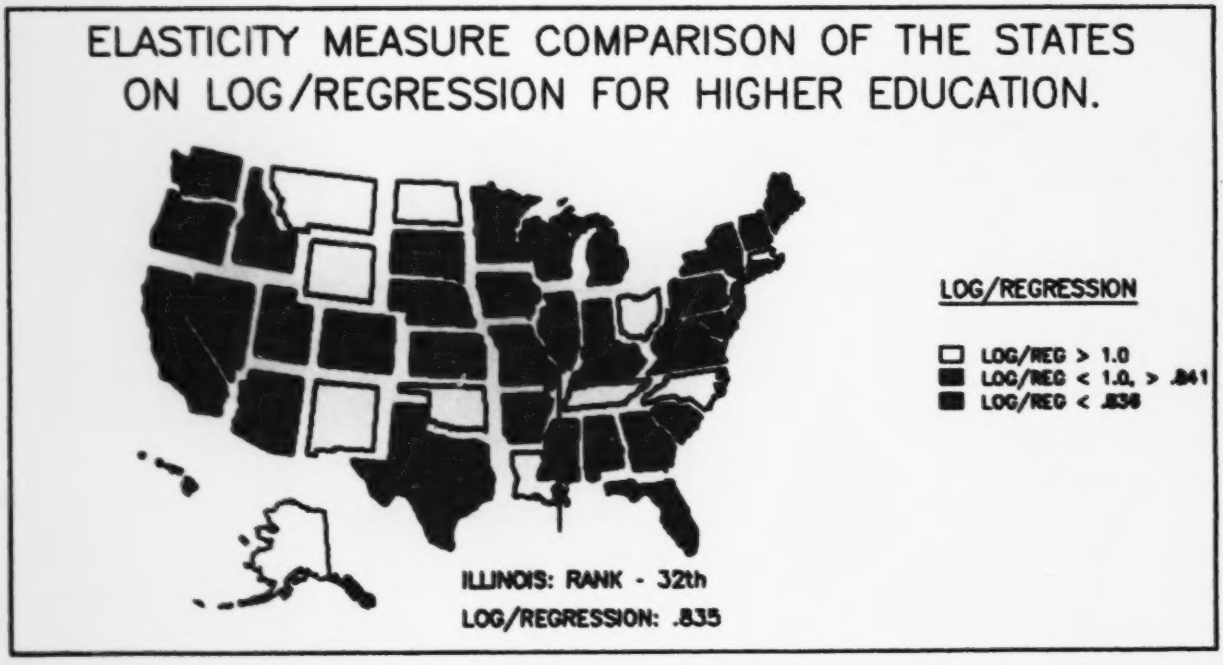

TABLE 11 A
WEIGHTED MEAN EXPENDITURES PER ADA BY STATE: OVER TIME

CURRENT DOLLARS

PAIRED SAMPLES t-TEST:

Event	n	Weighted Mean	Standard Deviation	df	t
Before	17	1295.04	908.08	16	-3.87*
After	17	2820.18	941.85		

*p=.001

INDEPENDENT SAMPLES t-TEST:

Group	n	Weighted Mean	Standard Deviation	df	t
Event States:Before	17	1295.04	908.08	20.45	-2.44*
Non-event States	33	1867.63	466.38		

*p < .03

INDEPENDENT SAMPLES t-TEST:

Group	n	Weighted Mean	Standard Deviation	df	t
Event States:After	17	2820.18	941.85	20.14	3.93*
Non-event States	33	1867.63	466.38		

*p=.001

CONSTANT DOLLARS

PAIRED SAMPLES t-TEST:

Event	n	Weighted Mean	Standard Deviation	df	t
Before	17	785.56	435.15	16	-1.15
After	17	1001.60	429.99		

INDEPENDENT SAMPLES t-TEST:

Group	n	Weighted Mean	Standard Deviation	df	t
Event States:Before	17	785.56	435.14	19.27	-.22
Non-event States	33	809.81	191.79		

INDEPENDENT SAMPLES t-TEST:

Group	n	Weighted Mean	Standard Deviation	df	t
Event States:After	17	1001.60	429.99	19.35	1.75
Non-event States	33	809.81	191.79		

TABLE 11 B
EXPENDITURES PER ADA BY STATE

CURRENT DOLLARS

PAIRED SAMPLES t-TEST:

Event	n	Mean	Std. Dev.	df	t
Before	17	125.45	42.06	16	-6.45*
After	17	280.64	117.39		

*p < .001

INDEPENDENT SAMPLES t-TEST:

Group	n	Mean	Std.Dev.	df	t
Event States:Before	17	125.45	42.06	48	-3.35*
Non-event States	33	177.25	56.13		

*p < .002

INDEPENDENT SAMPLES t-TEST:

Group	n	Mean	Std. Dev.	df	t
Event States:After	17	280.64	117.39	19.85	3.44*
Non-event States	33	177.25	56.13		

*p < .003

CONSTANT DOLLARS

PAIRED SAMPLES t-TEST:

Event	n	Mean	Std. Dev.	df	t
Before	17	33.27	22.63	16	-.24
After	17	35.44	27.18		

INDEPENDENT SAMPLES t-TEST:

Group	n	Mean	Std. Dev.	df	t
Event States:Before	17	33.27	22.63	21.39	1.43
Non-event States	33	24.82	12.77		

INDEPENDENT SAMPLES t-TEST:

Group	n	Mean	Std. Dev.	df	t
Event States:After	17	35.44	27.18	19.72	1.53
Non-event States	33	24.82	12.77		

APPENDIX A

ALTERNATIVE COMPUTATIONS OF ELASTICITIES BY THE TWO-POINTS IN TIME METHOD

State	% Change Expenditure	% Change Income	Elasticity Measure	Elasticity Rank	% National Average
Wyoming	272.353	101.456	2.684	1	323.43
Alaska	143.392	82.451	1.739	2	209.53
Texas	189.249	128.367	1.474	3	177.62
Montana	137.727	106.970	1.288	4	155.12
West Virginia	124.017	99.760	1.243	5	149.78
Kentucky	141.624	114.715	1.235	6	148.74
Oklahoma	135.354	123.066	1.100	7	132.51
North Dakota	118.462	113.382	1.045	8	125.88
South Carolina	125.311	123.385	1.016	9	122.36
Louisiana	119.748	118.063	1.014	10	122.20
New Mexico	116.446	121.280	0.960	11	115.68
Oregon	105.651	112.914	0.936	12	112.73
Indiana	107.231	114.921	0.933	13	112.42
Kansas	118.951	128.002	0.929	14	111.96
Georgia	132.816	144.810	0.917	15	110.50
Arkansas	115.023	125.573	0.916	16	110.36
Ohio	111.918	122.232	0.916	17	110.32
Alabama	110.773	124.536	0.889	18	107.17
Utah	95.129	108.445	0.877	19	105.69
South Dakota	113.400	132.540	0.856	20	103.08
Washington	101.341	119.191	0.850	21	102.44
Maine	121.648	143.315	0.849	22	102.27
Nebraska	103.048	122.521	0.841	23	101.33
New Jersey	130.303	155.796	0.836	24	100.77
Iowa	92.647	111.806	0.829	25	99.84
Tennessee	100.455	127.024	0.791	26	95.28
Wisconsin	101.266	130.206	0.778	27	93.70
Mississippi	89.125	120.546	0.739	28	89.08
Michigan	87.883	119.462	0.736	29	88.63
Hawaii	77.379	108.092	0.716	30	86.25
Missouri	97.490	136.199	0.716	31	86.24
Connecticut	113.830	163.320	0.697	32	83.97
Pennsylvania	85.604	124.233	0.689	33	83.02
Delaware	76.828	111.621	0.688	34	82.93
Virginia	100.545	147.153	0.683	35	82.32
Vermont	97.240	145.825	0.667	36	80.34
Rhode Island	89.412	136.469	0.655	37	78.94
Idaho	68.605	105.358	0.651	38	78.45
New York	91.321	145.874	0.626	39	75.42
California	86.159	138.526	0.622	40	74.94
Nevada	70.957	114.286	0.621	41	74.80
North Carolina	80.581	130.743	0.616	42	74.26
Illinois	70.550	115.110	0.613	43	73.84
Colorado	83.210	140.157	0.594	44	71.53
Massachusetts	97.508	168.435	0.579	45	69.75
Florida	80.832	141.971	0.569	46	68.60
Maryland	78.286	141.928	0.552	47	66.46
New Hampshire	87.747	171.907	0.510	48	61.50
Minnesota	58.323	141.918	0.411	49	49.51
Arizona	42.630	133.585	0.319	50	38.45
U.S. Average			0.830		100.00

COMPUTATION OF ELASTICITIES BY THE LOG/REGRESSION METHOD

States	Elasticity Log/Regression	Log/ Regresssion Rank	Two-Points in Time Rank	Percent National Average Log/Regression
Alabama	0.917	15	18	108.675
Alaska	1.243	2	2	147.310
Arizona	0.475	50	50	56.293
Arkansas	0.935	10	16	110.808
California	0.615	47	40	72.885
Colorado	0.687	43	44	81.417
Connecticut	0.723	37	32	85.684
Delaware	0.729	36	34	86.395
Florida	0.695	39	46	82.365
Georgia	0.905	18	15	107.253
Hawaii	0.613	48	30	72.648
Idaho	0.732	35	38	86.750
Illinois	0.652	45	43	77.269
Indiana	0.912	16	13	108.082
Iowa	0.818	26	25	96.942
Kansas	0.908	17	14	107.608
Kentucky	1.116	5	6	132.259
Louisiana	0.902	19	10	106.897
Maine	0.841	25	22	99.668
Maryland	0.661	44	47	78.336
Massachusetts	0.643	46	45	76.203
Michigan	0.771	31	29	91.372
Minnesota	0.521	49	49	61.744
Mississippi	0.786	30	28	93.150
Missouri	0.787	29	31	93.269
Montana	1.057	6	4	125.267
Nebraska	0.875	22	23	103.698
Nevada	0.691	42	41	81.891
New Hampshire	0.871	23	48	103.224
New Jersey	0.858	24	24	101.683
New Mexico	0.932	11	11	110.453
New York	0.693	41	39	82.128
North Carolina	0.695	40	42	82.365
North Dakota	0.929	12	8	110.097
Ohio	0.926	13	17	109.742
Oklahoma	1.010	7	7	119.697
Oregon	1.004	8	12	118.986
Pennsylvania	0.719	38	33	85.210
Rhode Island	0.732	34	37	86.750
South Carolina	0.990	9	9	117.326
South Dakota	0.877	21	20	103.935
Tennessee	0.816	27	26	96.705
Texas	1.151	4	3	136.407
Utah	0.900	20	19	106.660
Vermont	0.738	33	36	87.461
Virginia	0.750	32	35	88.884
Washington	0.919	14	21	108.912
West Virginia	1.154	3	5	136.762
Wisconsin	0.815	28	27	96.587
Wyoming	1.501	1	1	177.886
U.S.Average	0.844			

APPENDIX B

DATA SOURCES: K-12
GUILTY GOVERNMENTS
MacArthur/Spencer Series Number 8
Center for the Study of Educational Finance
Illinois State University

I) Expenditure PER ADA:

Statistical Abstracts of the United States 1969-1982, 1985-1987. (Expenditure data PER ADA were not available from the same source for 1983 and 1984. These data were derived from calculations of average change for prior and subsequent year expenditures.)

II) McMahon Adjustments:

1. 1988: Walter W. McMahon, Geographical Cost of Living Differences: An Update. MacArthur/Spencer Series Number 7, Center for the Study of Educational Finance, Illinois State University, August, 1988.
2. 1978: Walter W. McMahon, and Carroll Melton (1977), "A Cost of Living Index for Illinois Counties and School Districts," in Perspectives on Illinois School Finance, Carol E. Hanes, ed., Illinois Office of Education, Springfield (November 1977), pp.331.

III) Population Data:

1. U.S. Census Bureau, 1977-1987.

IV) Expenditures PER CAPITA:

Statistical Abstracts of the United States, 1977, 1987. Total expenditures (which included interest on school debt and other current expenditures excluding capital outlay) were divided by population figures per state.

V) Consumer Price Index:

U.S. Bureau of Labor Statistics. Cited from Statistical Abstracts of the United States, 1987. (Calculations for 1987-1988 were derived from the average differences in prior year CPI indices. 1967=$1.00.

VI) **Legal Citations; Preliminary K-12 Finance Litigation:**

1. Serranno v. Priest, 5 Cal. 3d 584, 584 P.2d 1241 (1971).

2. Thompson v. Engelking, 96 Idaho 793,537 P.2d 635 (1975).

3. Olsen v. State of Oregon, 276 Or. 9, 554 P.2d 139 (1976).

4. Danson v. Casey, 484 Pa. 415, 399 A.2d 360 (1979).

5. Lujan v. Colorado State BOard of Education, 649 P.2 1005 (1982).

6. Hornbeck v. Somerset County Board of Education, 295 Me. 597, 458 A.2d 758 (1983).

7. Robinson v. Cahill, 62 N.J. 473, 303 A.2d 273, cert. den. 414 U.S. 976, 94 S.Ct. 292 (1973).

8. Horton v. Meskill, 172 Conn. 615, 376 A.2d 359 (1977).

9. Pauley v. Kelly, 162 W. Va. 672, 255 S.E. 2d 859 (1979).

10. DuPree v. Alma School District No. 30, 279 Ark. 340, 651 S.W. 2d 90 (1983).

11. Stofstall v. Hollins, 110 Ariz. 88, 515 P.2d 590 (1973).

12. Milliken v. Green, 389 Mich. 1, 203 N.W. 2d 457 (1972).

13. Board of Education, Levittown Union Free School District v. Nyquist, 57 N.Y. 2d 27, 439 N.E. 2d 359 (1982), appeal dismissed 459 U.S. 1138, 103 S.Ct. 775 (1983).

14. Hornbeck v. Somerset COunty Board of Education, 295 Me. 597, 458 A.2d 758 (1983).

15. Washakie County School DIstrict No. One v. Herschler, 606 P.2d 310, cert. den. sub. nom. Hot Springs County School District No. One v. Washakie County School District No. One, 449 U.S. 824, 101 S. Ct. 86 (1980).

16. McDaniels v. Thomas, 248 Ga. 632, 285 S.E. 2d 156 (1981).

17. Board of Education of the City School District of the City of Cincinnati v. Walter, 58 Ohio St. 368, 390 N.E. 2d 813 (1979), cert. den., 444 U.S. 1015, 100 S. Ct. 665 (1980).

18. Northshore School District No. 47 v. Kinnear, 84 Wash. 2d 685, 530 P.2d 178 (1975).

ABSTRACTS OF THE MACARTHUR/SPENCER SERIES ON ILLINOIS EDUCATIONAL FINANCE

1. Two Essays on the Political and Normative Aspects of American School Finance: An Historical Perspective, March 1987, 30 pages, G. Alan Karnes-Wallis Hickrod and James Gordon Ward.

   This monograph explores the political foundations of educational finance in the United States. The first essay outlines the contribution of public education to a democratic form of government and was written partially in response to a challenge to public education funding which appeared in Forbes magazine. The second essay surveys the basic concepts present in the modern study of educational finance, grounding that survey in a review of the first textbooks written in educational finance in the USA.

2. A Brief History of K-12 Finance in Illinois or 162 Years in Search of the Perfect Formula, April 1987, 14 pages, G. Alan Karnes-Wallis Hickrod

   This monograph is a brief historical study of K-12 funding in Illinois stretching from before the Civil War to the present. It stresses the legislative history of the general grant-in-aid formula for K-12 education.

3. The Constitutionality of the K-12 Funding System in Illinois: Legal Issues. May 1987, 150 pages, David L. Franklin and Others.

   A comprehensive and detailed discussion of constitutional challenges to the K-12 funding systems in nineteen states, this study focuses on the characteristics of the winning briefs in the litigation. While it does not actually write the brief, it denotes the points of law that would have to be won in order to mount a successful constitutional challenge. Applications are then made from this history of litigation to the particular Illinois situation. It is considered to be a companion volume to report #4 which deals with factual data that might be used in educational finance litigation in Illinois.

4. Documenting a Disaster: Equity and Adequacy in Illinois School Finance: 1973-1988, December 1987, 44 pages, G. Alan Karnes-Wallis Hickrod and Others.

   This is a continuation of the monitoring series on the equity effects of the Illinois K-12 general grant-in-aid which has been published by the Center for the Study of Educational Finance for many years. In addition, it begins the investigation of the adequacy of the support system in Illinois. It has been widely quoted by the press for its stark conclusion: "We are doing a lousy job of school finance in Illinois."

5. The Concept of Adequacy in Illinois School Finance, October 1987, 24 pages, James Gordon Ward.

   This is an exploration of the concept of adequacy including some operational definitions of the term. It also includes some empirical evidence and is related to the findings on adequacy of funding contained in report #4.

6. City Schools, Rural Schools, March 1988, 10 pages, James Gordon Ward.

This is a study of a nine-county region in East Central Illinois. Its focus is on the alleged benefits of school district consolidation. The findings cast some doubt on the oft-repeated charge that small rural districts offer sub-standard education.

7. Geographic Cost of Living Differences: An Update, August 1988, 20 pages, Walter W. McMahon.

This is an econometric study of geographic cost-of-living differences between states in the United States and between counties within Illinois. Geographic cost-of-living indices have many uses. In education these indices are used to adjust educational costs between geographic areas to obtain "constant" or "real" dollar differences in educational spending. The indices are being used in on-going research at the Center for the Study of Educational Finance in the Illinois State Board of Education in Springfield.

Note: All of these studies are available from the Center for the Study of Educational Finance, 340 DeGarmo Hall, Illinois State University, Normal, Illinois 61761. (309)438-5405. There is a nominal charge of $1.00 each to cover postage and handling. Individuals or organization not now on the Center's mailing list may ask to be placed on the list in order to receive, free of charge, all future studies in the series